Environmental
Commissioner
of Ontario

LOSING TOUCH

ANNUAL REPORT
2011/2012
PART 1

Environmental
Commissioner
of Ontario

Commissaire à
l'environnement
de l'Ontario

Gord Miller, B.Sc., M.Sc.
Commissioner

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Commissaire

September 2012

The Honourable Dave Levac
Speaker of the Legislative Assembly of Ontario

Room 180, Legislative Building
Legislative Assembly
Province of Ontario
Queen's Park

Dear Speaker:

In accordance with Section 58 of the *Environmental Bill of Rights, 1993*, I am pleased to present Part 1 of the 2011/2012 Annual Report of the Environmental Commissioner of Ontario for your submission to the Legislative Assembly of Ontario.

Sincerely,

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COMMISSIONER'S INTRODUCTION

Sometimes I think we have all forgotten our civics. Remember, we have a parliamentary democracy and that democracy (paraphrasing Churchill) is the worst system except when you compare it to all others. We elect a parliament (in Ontario, a Legislative Assembly) to make our laws. Those laws declare the intent of parliament and parliament is supreme! There is, of course, a considerable amount of detail that is involved in delivering parliament's intent, so the laws delegate to the Cabinet of the day the right to pass regulations to administer the laws without bothering parliament with administrivia. The "civil service" (as it used to be called) takes over the day-to-day administration of the laws and regulations in the day-to-day business of government. Or, at least, that is how it is supposed to work.

There are some variations from this model. As Environmental Commissioner, I am an Officer of the Legislative Assembly charged with administering the Environmental Bill of Rights, 1993 (EBR)*. This is a unique piece of legislation which allows you, the people, to participate in the decision making of government as it relates to the environment. In essence, it is a law that holds the government of the day to be transparent and accountable to the people with respect to environmental decision making. And, it tasks me to see that that happens. This brings me to the significance of this report.*

Each year within my large Annual Report to the Legislature, I comment on the compliance of various ministries of government with the legal requirements of the EBR*. There is, of course, always some degree of non-compliance. Mistakes happen and there are always differences of opinion with regard to interpreting what exactly is required by the wording of the statute. But lately there has been a marked change in the behaviour of some ministries in respecting the rights of the citizens of Ontario under the* EBR*. This disregard for the rights of Ontarians has increased to a scope and degree such that I find it necessary to break out this portion of my statutory reporting requirements into its own part, so that Legislators can focus on the implications of the situation.*

CHAPTER 1.0

THE *ENVIRONMENTAL BILL OF RIGHTS, 1993*

This year, the ECO's Annual Report is divided into two parts. This first part of the Annual Report (Part I) focuses on the compliance of prescribed ministries with the procedural requirements of the *Environmental Bill of Rights, 1993* (*EBR*), such as adherence to the legislative timelines, use of the Environmental Registry, and the provision of notice and consultation on environmentally significant decisions. Part II of the Annual Report (to be released later under separate cover) will focus on reviewing how prescribed ministries have upheld the purposes of the *EBR* and their individual Statements of Environmental Values (SEVs) during the reporting year through substantive reviews of ministry decisions, ministry responses to applications for review and investigation, and other environmental issues.

1.1 | Significance of the *EBR*

The *EBR* is one of the most significant environmental laws of our time. Its purposes are to:

- protect, conserve and, where reasonable, restore the integrity of the environment;
- provide sustainability of the environment; and
- protect the right of Ontarians to a healthful environment.

The *EBR* is a unique law, unlike any other jurisdiction in Canada or the rest of the world.

In order to achieve the goals of the *EBR*, the Act imposes requirements for the Ontario government to consider the environment in its decision making. Further, the *EBR* recognizes that while the government has the primary responsibility for protecting the natural environment, the people of Ontario have the right to participate in the government's environmental decision making, and the right to hold the government accountable for those decisions. As such, the *EBR* provides several tools to support a transparent process and enable the public to participate in government decision making that affects the environment.

It is important to note that the *EBR* does not apply to all ministries. The *EBR* only applies to select provincial ministries that are "prescribed" under the Act by Cabinet decision. Getting the right ministries prescribed to meet the purposes of the Act, and keeping them prescribed through various name changes and reorganizations, is one of the challenges identified in this report. For a detailed description of which ministries (as well as acts, regulations, policies and instruments administered by those ministries) are prescribed for the purposes of the *EBR*, see Appendix I: Prescribed Ministries and Acts.

1.2 | The Tool Kit of the *EBR*

There are five broad categories of tools in the *EBR* that establish rights and responsibilities for the provincial ministries, the Commissioner and the participating public.

Statement of Environmental Values

The *EBR* requires each prescribed ministry to develop and publish a "Statement of Environmental Values" (SEV) which they must "consider" when making decisions that might significantly affect the environment. An SEV describes how the ministry will integrate environmental values with social, economic and scientific considerations when it makes environmentally significant decisions. The ministry does not have to always conform to its stated values, but it does have to clearly inform the public how it considered its SEV in the decision-making process. This is the mechanism by which the public knows how a given ministry sees its environmental responsibilities.

Public Notice and Consultation through the Environmental Registry

One of the key tools for enabling the public to engage in environmentally significant decision making is the Environmental Registry. It is a searchable online database that provides public access to information about environmentally significant proposals and decisions made by the Ontario government. Under the *EBR*, all prescribed ministries are required to give notice of environmentally significant proposals on the Environmental Registry, and to provide a minimum of 30 days for the public to submit comments on the proposal before the ministry makes a final decision. Once the ministry has made a decision, it must post a notice on the Environmental Registry that explains the effect of public participation on the ministry's decision.

Every year, the ECO reports on a selection of decisions posted on the Environmental Registry, including reviewing ministry compliance with *EBR* public consultation requirements. For more information about the government's use of the Environmental Registry this reporting year, refer to Appendix II: Ministry Use of the Environmental Registry in 2011/2012.

Applications for Review and Investigation

The *EBR* gives Ontario residents the right to ask a prescribed ministry to review an existing environmentally significant policy, act, regulation or instrument, or to request a review of the need for a new policy, act or regulation where one is absent; this is called an "application for review." The *EBR* also gives Ontario residents the right to ask a prescribed ministry to investigate alleged contraventions of prescribed acts, regulations or instruments; this is called an "application for investigation." Applications are a powerful tool that the public can use to participate in and influence government decision making, and to ensure environmental laws and policies are upheld. Ministries who receive applications must follow the procedures set out in the *EBR* when considering those applications. The ECO reviews and reports on ministries' handling of these applications.

Appeals, Lawsuits and Whistleblower Protection

The *EBR* also increases Ontarians' access to the courts and tribunals to protect the environment. The *EBR* provides a special right for members of the public to appeal (i.e., challenge) certain ministry decisions regarding instruments (e.g., permits, licences, etc.). It also gives Ontarians the right to take court action to prevent harm to a public resource, and the right to seek damages for environmental harm caused by a public nuisance without being required to obtain the consent of the Attorney General. Finally, the *EBR* also provides enhanced protection for employees who suffer reprisals from their employers for exercising their *EBR* rights or for complying with or seeking the enforcement of environmental rules. For more information about these rights under the *EBR*, refer to Appendix III: Appeals, Lawsuits and Whistleblowers.

The Environmental Commissioner of Ontario

The Environmental Commissioner of Ontario (ECO), as an independent Officer of the Legislative Assembly, is responsible for reviewing and reporting on the government's compliance with the *EBR*. The ECO reports annually to the Legislative Assembly — not to the governing political party or to a ministry. To ensure the *EBR* is upheld, the ECO monitors how ministers exercise their discretion and carry out their responsibilities in relation to the *EBR*. The ECO reports on whether ministries have complied with the procedural and technical requirements of the law, and whether the ministries' decisions were consistent with their SEVs and the purposes of the *EBR*. For example, each year, the ECO reviews: whether ministries properly used the Environmental Registry to provide notice and consult with the public; how ministries considered public input when making decisions about environmentally significant decisions; and how ministries handled applications for review and investigation.

CHAPTER 2.0

GAMES MINISTRIES PLAY

FAILURES TO COMPLY WITH THE *EBR*

Every year, the ECO observes instances in which ministries fail to meet their legal obligations under the *Environmental Bill of Rights, 1993* (*EBR*) to properly notify the public of environmentally significant proposals on the Environmental Registry. To be clear, this obligation involves posting a proposal notice, providing a public comment period, and posting a decision notice that acknowledges the public's input in the ministry's final decision. Subsequently, the ECO has a statutory obligation to report to the Legislature on how well the public's rights have been respected. It sounds simple enough, but frequently this requirement for notification and comment is circumvented (see Table 1).

In some cases, ministries improperly post proposals that should be posted as regular proposal notices as "information notices." Information notices look similar to normal proposal notices, but they do not include the *EBR* right to comment and are not followed by a decision notice clearly indicating what was finally decided.

Sometimes, the ministries post information notices on the Environmental Registry that do seek the public's comments, but in failing to follow the proper *EBR* process to post proposal and decision notices, these ministries still deny the public some of its *EBR* rights. Seeking comments with neither the requirement to consider them, nor the accountability of having the ECO verify compliance, is at best misleading to the public, and at worst, a mockery of the instructions of the Legislature.

Other times, ministries fail to post any notice at all on the Environmental Registry. In these cases, ministries often misunderstand or deliberately circumvent their *EBR* requirements. For example, the *EBR* is quite clear that environmentally significant policies—including guidelines, programs, plans or manuals—must be posted as proposal notices on the Environmental Registry for public comment; yet, with disturbing frequency, this is not done.

A chronic *EBR* offender in failing to post proposals on the Environmental Registry for public consultation is the Ministry of Natural Resources (MNR). In recent years, the ministry has increasingly evaded its obligations under the *EBR*, depriving the public of its established rights. Systemic barriers within the ministry include its internal *EBR* processes and the related delegation of authority for decision making. Even in cases where the ECO has warned the ministry of non-compliance, MNR generally resists correcting its errors or finding a solution that serves the public interest and meets legal requirements.

Table 1
Ministry Non-compliance with the *EBR* in Failing to Properly Post on the Environmental Registry in the 2011-2012 Reporting Year.

Ministry of the Environment	• Climate Ready: Ontario's Adaptation Strategy and Action Plan 2011–2014
Ministry of Energy	• Two-Year Feed-in Tariff Review
Ministry of Natural Resources	• Provincial Park Boundary Adjustments: Grundy Lake Provincial Park and French River Provincial Park • Provincial Park Boundary Adjustments: DuPont, Wasaga Beach, and Charleston Lake Provincial Parks • Independent Forest Audit Process and Protocol (2011) and the Review of the Independent Forest Audit Process • Provincial Wildlife Population Monitoring Program Plan Version 2.0 • Significant Wildlife Habitat Ecoregion Criteria Schedules: Addendum to Significant Wildlife Habitat Technical Guide (Working Draft January 2009) • Our Sustainable Future—A Renewed Call to Action (2011) • Policies under the Caribou Conservation Plan, 2009
Ministry of Northern Development and Mines	• Terms of Reference for a Class Environmental Assessment for Activities of the Ministry of Northern Development, Mines and Forestry under the *Mining Act*
Ministry of Transportation	• Amendments to the Ministry of Transportation's Class Environmental Assessment

2.1 | No Chance to Comment: Ministry of Energy's Two-Year Feed-in Tariff Review

On October 31, 2011, the Ministry of Energy (ENG) launched a scheduled review of its Feed-in Tariff (FIT) Program, two years after the program's creation. The review had a wide mandate to examine a number of issues related to the program, including some that were environmentally significant. These issues included: an examination of FIT pricing; potential inclusion of new technologies and fuel sources; assessment of government policies to ensure that Ontario remains a centre of manufacturing excellence and clean energy job creation; and improving outreach techniques to complement the province's Renewable Energy Approval (REA) process.

The ministry did not post a regular proposal notice for this public review on the Environmental Registry. Instead, the ministry solicited feedback on its own website and posted an information notice on the Environmental Registry (#011-4827). The ECO wrote to the ministry, stating that its use of an information notice in no way satisfied the ministry's legal obligations under the *EBR*. The ECO further stated that neither the information notice nor the ministry website provided a clear proposal or supporting information to enable the public to provide meaningful comment on the proposed policy. Additionally, the ECO noted that there would be no assurance that the ministry would share the results of its survey or explain how the ministry actually considered public feedback in its decision.

The ministry responded to the ECO stating that the Minister had determined that there was no requirement to post a proposal notice on the Environmental Registry for this review. The ministry noted that "the focus of the review is operational in nature, including: pricing, program design and technical aspects and therefore will have no significant effect on the environment."

The ECO strongly disagrees with ENG's claim that this policy review did not need to be posted on the Environmental Registry. A number of elements in the ministry's review were clearly environmentally significant policies and, therefore, subject to *EBR* requirements for public consultation.

This issue highlights a difficulty in how some ministries interpret the *EBR* provision that states that policy proposals that are "predominantly financial or administrative in nature" do not have to be posted for public comment. Energy pricing policies often have environmental consequences; in this case, FIT pricing provides incentives that may influence how much renewable energy is produced in Ontario and from which sources, which is environmentally significant and thus must be posted on the Environmental Registry. Similarly, carbon pricing and water pricing are financial tools; however, these are intimately linked with conservation and, therefore, are predominantly environmental in nature.

2.2 | No Chance to Comment: Ministry of Natural Resources' Strategic Direction

In April 2011, MNR finalized a new overarching policy, Our Sustainable Future: A Renewed Call to Action. This environmentally significant policy is an "expression of long-term strategic directions and current priorities" for the entire ministry. For example, it establishes MNR's core activities for the years to come: biodiversity management; natural heritage and protected area management; Crown land, water and non-renewable resource management; renewable energy; and forest management.

MNR failed to comply with the *EBR* requirement to consult the public on this strategic direction for the ministry. Additionally, this important policy was not made publicly available on the MNR website. It is noteworthy that the ministry's principles outlined in this strategic direction do not include the value of public participation, unlike its own SEV.

The ECO wrote to MNR, asking why it had not posted a policy proposal notice on the Environmental Registry for this policy. The ECO further questioned how MNR had considered its SEV in the decision-making process as required by the *EBR* and how the ministry had determined that the policy did not need to be posted on the Environmental Registry. Finally, the

ECO asked when the policy was going to be made publicly available. MNR failed to resolve this non-compliance with the *EBR*.

2.3 | No Chance to Comment: Ministry of Natural Resources' Provincial Wildlife Population Monitoring Program Plan

MNR is responsible for ensuring the sustainable management of Ontario's Crown forests. This undertaking requires an understanding about how timber harvesting affects wildlife. To this end, MNR is legally required through a Declaration Order under the *Environmental Assessment Act* to maintain a Provincial Wildlife Population Monitoring Program (PWPMP). The ministry's program plan for the PWPMP is intended to outline the program's priorities, representative species to be monitored, and proposed activities and schedules.

In June 2010, the ministry published a version of the program plan on its website, without undertaking public consultation as required under the *EBR*. The ECO wrote to MNR to inquire how the ministry had considered its SEV and whether it had undertaken any public consultation during the development of the program plan. The ministry replied that it planned to post the program plan on the Environmental Registry for public comment in fall 2011 as part of a program review.

In December 2011, the ministry then inappropriately posted the proposal for the program plan review as an information notice. The information notice solicited public input with a 30-day comment period (#011-4230). The ECO wrote to MNR to remind the ministry that it is entirely inappropriate to post what is clearly an environmentally significant policy proposal as an information notice; the net effect of this non-compliance is that the public is deprived of its rights under the *EBR*.

The ministry responded in January 2012 by stating, "[t]he ministry's interpretation is that the Provincial Wildlife Population Monitoring Program Plan Version 2.0 is not a policy, act, regulation or instrument that requires posting on the Environmental Registry." Further, MNR stated that the information notice posted on the Environmental Registry provided the opportunity for public comment, as it had promised.

The ECO unequivocally disagrees with MNR's claim that the program plan is not a policy that requires posting on the Environmental Registry. The definition of "policy" in the *EBR* explicitly includes "plans." Further, the program plan and its implementation could have significant environmental effects at a provincial scale. MNR's assertion that it kept its promise to provide an opportunity for public comment, while technically accurate, is disingenuous; by using an information notice, the ministry avoided giving notice of its decision and explaining the effect of public comments. The ECO maintains that MNR's continued failure to post a proposal for this policy is an indefensible act of non-compliance with the *EBR*. Moreover, the information notice did not even provide enough information for the public to meaningfully understand this program plan or its importance.

To clarify the ministry's obligations under the *EBR*, the ECO sent MNR a legal opinion from a third party that confirms that the ministry is required to post a policy proposal for public consultation on the Environmental Registry for this program plan. MNR never responded to this legal opinion or addressed this official concern of an Officer of the Legislative Assembly.

In several of our Annual Reports, the ECO has repeatedly warned MNR about its *EBR* non-compliance for this wildlife monitoring program. The net result is that Ontarians have never had the chance, in over 18 years of the program's existence, to properly review and provide comment on this environmentally significant policy that is vital to understanding how timber harvesting affects wildlife across the province.

2.4 | No Right to Comment: Amending Environmental Laws in Budget Bills

Laws that safeguard our environment are themselves protected under the *EBR*. Normally, when the government proposes to amend legislation that is prescribed under the *EBR*, it would post a proposal notice on the Environmental Registry and solicit public comments for at least 30 days, if not longer. At about the same time, Members of Provincial Parliament would debate the specific details of the proposed changes in the Ontario Legislature; in some cases, the proposed changes would also undergo further scrutiny in a legislative committee and public testimony might be heard. The government then contemplates all this feedback and makes a decision. These steps help make for a democratic process in which there has been different opportunities to hear all perspectives; these steps also make for a defensible outcome. However, this process can be circumvented.

On March 27, 2012, the Minister of Finance tabled for first reading in the legislature Bill 55—*Strong Action for Ontario Act (Budget Measures), 2012*. Budgets bills are specifically exempt from the posting and public consultation requirements of the *EBR*. Bill 55 included proposed amendments to 69 different statutes, including nine laws that are prescribed under the *EBR*:

- the *Endangered Species Act, 2007*
- the *Provincial Parks and Conservation Reserves Act, 2006*
- the *Fish and Wildlife Conservation Act, 1997*
- the *Public Lands Act*
- the *Crown Forest Sustainability Act, 1994*
- the *Niagara Escarpment Planning and Development Act*
- the *Kawartha Highlands Signature Site Park Act*
- the *Lakes and Rivers Improvement Act*
- the *Clean Water Act, 2006*

The budget bill was passed on June 20, 2012, making changes to all of these statutes except the *Endangered Species Act, 2007* and the *Crown Forest Sustainability Act, 1994*. Changes included: allowing Crown land to be managed by third parties; making management plans for provincial parks discretionary; and allowing a third party to issue hunting licences and set conditions on those licences. These are only a few of the changes.

Almost twenty years ago, the Legislature chose to give Ontarians the right to publicly comment when amendments to environmental laws are proposed and to know how their comments were considered by the government in whatever decision was reached. These protections are enshrined in the *EBR*. The budget bill exemption included in the *EBR* was surely not intended to allow government to make significant, primarily non-fiscal changes to environmental legislation without proper public participation. Bill 55 unnecessarily undermined public confidence in government decision making relating to the environment.

CHAPTER 3.0

WON'T BE HELD ACCOUNTABLE TO THE PUBLIC

MINISTRIES NOT PRESCRIBED UNDER THE *EBR*

The *Environmental Bill of Rights, 1993* (*EBR*) establishes important rights to ensure government accountability, transparency, and public participation in environmental decision making. However, these responsibilities only apply to the provincial ministries that are "prescribed" (i.e., designated in a regulation) under the *EBR*. Therefore, for the *EBR* to function, it is essential that those ministries (and agencies) that make decisions that have, or may have, an impact on the environment are prescribed under the *EBR*.

Currently, there are 14 ministries prescribed under the *EBR* (see Appendix I). However, there are a few ministries and agencies that make decisions that affect the environment that are not prescribed. The ECO has been flagging these omissions for years. In this section, the ECO highlights three ministries that have presented barriers and long delays to becoming prescribed (for a full discussion of ministries, agencies, acts and instruments that should be prescribed, see Appendix V).

The failure to prescribe appropriate ministries and agencies undermines the intent of the *EBR* and deprives the public of its rights: the right to participate in environmentally significant decisions made by these ministries, to ensure that Statements of Environmental Values (SEVs) are prepared and considered, and to request *EBR* investigations and reviews from these ministries. Moreover, the ECO is unable to scrutinize decisions of non-prescribed ministries in the same manner as decisions made by prescribed ministries and, therefore, is hampered in our ability to report to the Members of Provincial Parliament.

Formal responsibility for prescribing ministries in O. Reg. 73/94 under the *EBR* falls to the provincial Cabinet; however, it is the responsibility of the Ministry of the Environment (which administers the *EBR* and its supporting regulations) to work with the subject ministry to agree to become prescribed, and then to bring forward the proposed regulatory amendment to prescribe the new ministry. Sometimes, however, the subject ministry refuses to become prescribed, or alternately, takes years to internally review and discuss the parameters for which it may be prescribed. Even when the ministry has notionally agreed to become prescribed, there is often another unreasonably long delay before the *EBR* regulation is actually amended to prescribe the ministry. The ECO has repeatedly raised concerns about this protracted process for prescribing new ministries under the *EBR*. There is simply no reasonable justification for these excessive delays.

3.1 | No Public Rights: Ministry of Infrastructure

In August 2010, the Ministry of Energy and Infrastructure (MEI)—a prescribed ministry—was split into two separate ministries: the Ministry of Energy (ENG) and the Ministry of Infrastructure (MOI). In November 2010, the ECO met with the Deputy Minister of the new MOI and urged the ministry to become prescribed under the *EBR* for SEV consideration, posting proposal notices on the Environmental Registry for notice and comment, and for *EBR* applications for review. At that time, MOI indicated to the ECO that the ministry was working on becoming prescribed. However, in March 2011, MOE posted a notice on the Environmental Registry proposing to remove MEI under the *EBR* regulation and instead prescribe the new Ministry of Energy, but the notice made no mention of MOI.

MOI administers or oversees a number of acts (such as the *Places to Grow Act, 2005*), regulations, policies and agencies (e.g., Infrastructure Ontario) that have clear environmental significance. It is important that the public be given the opportunity to participate in MOI's environmentally significant decision making relating to public infrastructure, growth, and development. For example, in 2010/2011, MOI developed a ten-year plan for public infrastructure, which sets priorities for public infrastructure spending (including water, wastewater and transportation infrastructure). Although this major, environmentally significant plan was subject to extensive consultation, it should have been subject to the full rights provided by the *EBR*.

As of July 2012, nearly two years after MOI was formed, the ECO has not seen any real progress in prescribing MOI. The ECO strongly urges MOE and MOI to move forward, without delay, in prescribing MOI.

3.2 | No Public Rights: Ministry of Aboriginal Affairs

The Ministry of Aboriginal Affairs (MAA) was established by the Ontario government in November 2007 with a mandate to protect the rights of Aboriginal peoples, and promote the health and economic well-being of Aboriginal Ontarians. In November 2007, the ECO wrote to MAA requesting that it be prescribed for SEV consideration, posting proposal notices on the Environmental Registry for notice and comment, and for applications for review under the *EBR*. In early 2009, MOE advised the ECO that MOE and MAA had discussed some potential MAA activities that might be subject to the *EBR*. MOE also offered its ongoing assistance to MAA as MAA considered the parameters for becoming prescribed. In November 2010, MOE indicated that discussions with MAA were still ongoing, but as of July 2012, no further action was evident. The ECO continues to urge MOE and MAA to move forward on this matter.

3.3 | Public Rights Delayed: Ministry of Education

In September 2005, MOE recommended prescribing the Ministry of Education (EDU) under the *EBR* for the purposes of developing and considering an SEV for environmentally significant proposals. In November 2005, MOE posted a proposal notice on the Environmental Registry (#RA05E0016) to amend O. Reg. 73/94 to prescribe EDU for the purposes of SEV consideration. The notice stated, however, that EDU would not be required to post proposal notices for changes to policy and curriculum on the Environmental Registry. This proposal was never finalized.

Instead, in March 2011, MOE posted a new proposal on the Environmental Registry (# 011-2697) proposing to amend O. Reg. 73/94 to prescribe EDU for the purposes of SEV and public consultation provisions under Part II of the *EBR*. In yet another example of the interminable delays in prescribing ministries, this regulatory amendment to prescribe EDU was not made until August 2012. As a result, for seven years—from the time MOE first recommended prescribing EDU—the public lost out on opportunities to participate in EDU's environmentally significant decisions.

3.4 | The Name Game: Keeping the *EBR* in Sync with Ministry Name Changes

Sometimes, ministries that are prescribed cease to become technically prescribed because of governmental organizational changes, presenting yet another problem for keeping the *EBR* functioning effectively. Government is constantly evolving: new ministries are created; existing ministries are joined together or split apart; ministry names are changed; and portfolios are moved from one ministry to another. With each organizational change that involves a ministry with the potential to affect the environment, O. Reg. 73/94 under the *EBR* must be amended to reflect the new, renamed or restructured ministry name; otherwise existing rights under the *EBR* may be lost.

Despite the routine nature of government organizational changes, the *EBR* has no mechanism to address these ministry reorganizations. Instead, it typically takes months or even years before the *EBR* regulation is amended just to reflect a simple name change.

Such delays in updating the *EBR* regulation to properly identify the prescribed ministries create uncertainty and confusion for the public, the ECO, and ministry staff with respect to the ministry's responsibilities under the *EBR*. The ECO strongly urges the province—MOE and Cabinet Office, working together with the subject ministries—to develop an efficient and expedient process for keeping the *EBR* regulation in sync with ministry changes.

CHAPTER 4.0

PUBLIC'S RIGHTS DENIED

EBR APPLICATIONS FOR REVIEW AND INVESTIGATION

If two Ontario residents believe that the environment is not being sufficiently protected, the *Environmental Bill of Rights, 1993* (*EBR*) gives them the right to ask prescribed government ministries to review: an existing policy, act, regulation or instrument (e.g., an environmental compliance approval, permit, licence, etc.); or the need for a new act, regulation or policy. Such requests are called applications for review. Ontario residents can also ask ministries to investigate if they believe that specific environmental laws, regulations or instruments have been contravened. These particular public rights are exercised through applications for investigation.

Members of the public often raise important environmental issues through applications, sometimes focusing on site-specific issues, sometimes critiquing province-wide laws or policies, and sometimes drawing attention to policy vacuums. Applicants frequently support their arguments with an impressive level of knowledge and insight, and can show admirable passion, tenacity and patience in the face of frustrating situations. An *EBR* application can serve as an important ground-truthing mechanism for both the ECO and the government, highlighting issues that really matter to the public, and often spurring further research and action.

In the 2011/2012 reporting year, the ECO received 12 applications for review, and the ministries decided on 15 applications (some were submitted in previous years). The ministries denied undertaking all of these reviews but one. These applications for review submitted by the public dealt with diverse topics such as the Oak Ridges Moraine Conservation Plan and forest management in Algonquin Provincial Park.

The ECO also received four applications for investigation in this reporting year, and the ministries decided on five applications (some were submitted in previous years); three of these applications were undertaken. These applications dealt with topics such as the legality of bounties for hunting wildlife, the alleged discharge of contaminants from an auto body shop, and the alleged improper operation of an asphalt plant.

As a general trend over time, the ECO agrees in the majority of cases with the decisions made by ministries to either undertake or deny applications for investigation. For applications for review, whether or not the ECO agrees with the ministry's decision correlates highly with which ministry is involved; for example, the ECO generally agrees with the Ministry of the Environment's (MOE's) decisions in the majority of cases, but disagrees with the Ministry of Natural Resources' (MNR's) decisions the majority of the time.

4.1 | Playing Politics with the Public's Rights: Ministry of Natural Resources' Failure to Meet Legal Timelines

MNR demonstrated several serious acts of non-compliance in failing to meet the legislated 60-day timeline to respond to *EBR* applications in this reporting year. MNR took 133 days (i.e., 73 additional days) to respond to a request to review forest management in Algonquin Provincial Park that was filed in June 2011. The ministry was also took 252 days (i.e., 192 additional days) to respond to a request to investigate the legality of bounties in hunting coyotes and eastern wolves that was filed in March 2011. MNR did not respond to the applicants in either case until November 2011.

The ministry's failure to comply with non-discretionary *EBR* deadlines is an affront to the statutory instructions of the Legislature. MNR's failure to provide any explanation for its gross non-compliance could give the public the impression that the ministry's response was delayed for political purposes given that the Ontario provincial election occurred in October 2011. In both cases, these *EBR* applications were denied by the ministry.

4.2 | Ministry of Natural Resources: Denied All *EBR* Applications by the Public in the Last 5 Years

In this reporting year, MNR denied all three applications for review that it received. The ministry's handling of these public concerns reflects a disturbing trend by the ministry to deny each and every *EBR* application for review and investigation that it receives, regardless of the validity of concerns raised by the public. MNR has denied every *EBR* application that it has received in the last five years. The ECO believes that this trend reflects a systemic disregard by MNR of the public's rights under the *EBR* and it is indicative of poor internal decision making.

4.3 | Ministry of Municipal Affairs and Housing: Denied All *EBR* Applications by the Public in the Last 18 Years

The Ministry of Municipal Affairs and Housing (MMAH) received two applications for review in this reporting year, and denied both. As part of a long-standing trend, the ministry has now denied all 25 applications that it has received since the inception of the *EBR*. The ECO believes that MMAH's actions over this time represent a deliberate disregard to the will of the Ontario legislature in giving the public the right to file *EBR* applications for review related to the ministry's legislation and policies.

The overwhelming majority of the *EBR* applications that the public has submitted to MMAH have related to the Provincial Policy Statement (PPS) made under the *Planning Act* (see Table 2). Many of the issues raised by the public were valid and, often, pressing concerns. In almost every case, MMAH rationalized the denial of these requests, either because the PPS had already been reviewed within the last five years or it was in the process of being reviewed. This sounds like an acceptable legal rationale for denying an individual application under the *EBR*. However, the PPS review process is primarily focused on stakeholders and municipalities; it does not provide the kind of substantive response to public concerns and specific issues that the *EBR* application process is intended to ensure. The systemic refusal by MMAH to even contemplate the public's concerns voiced in these *EBR* applications represents an utter lack of respect for Ontarians, as well as a total lack of respect for the *EBR* process set out by the Legislature.

Other ministries often deny these very same *EBR* applications as well, but on different grounds. These ministries typically argue that they are not directly responsible for the PPS and, therefore, they defer to MMAH's decision on how to handle the issues raised by the public. However, the end result is the same: the public's concerns are ignored and the problems often go unaddressed. This entrenched disregard of public concerns does not constitute good public policy.

Table 2
Handling of All *EBR* Applications for Review Since 1994 Filed by the Public that Requested Changes Related to the Provincial Policy Statement under the *Planning Act*.

	Applications Submitted	Denied	Undertaken
MMAH	17	17	0
MNR	8	8	0
MOE	6	3	3

4.4 | Ministry of Northern Development and Mines: Denied All *EBR* Applications by the Public in the Last 18 Years

The Ministry of Northern Development and Mines (MNDM) has denied all 12 *EBR* applications filed by the public since the inception of the Act. MNDM's actions over this time show a total disregard for the will of the Ontario Legislature in giving the public the right to file *EBR* applications for review related to the ministry's legislation and policies. The ministry's actions—or lack thereof—constitute a flagrant disservice to the public and its rights. This trend also could give the public the impression that the ministry insufficiently weighs environmental concerns in its decision making.

CHAPTER 5.0

INSTRUMENTS AND STATEMENTS OF ENVIRONMENTAL VALUES

CONSIDERATION IS OVERDUE

Section 11 of the *Environmental Bill of Rights, 1993* (*EBR*) requires prescribed ministries to consider their Statements of Environmental Values (SEVs) when making decisions that might significantly affect the environment. SEVs embody the core environmental principles of each ministry. Requiring ministry staff to consider their ministy's SEV when making environmentally significant decisions obliges staff to turn their minds to these core principles, which should ultimately lead to better environmental decision making, and a cleaner more sustainable natural environment.

There is no ambiguity about the nature of this requirement. The interpretation has been challenged and adjudicated in our courts. In June 2008, the Ontario Divisional Court ruled that prescribed ministries must consider their SEVs when making decisions not only on environmentally significant policies, acts and regulations, but also on instruments prescribed under the *EBR* (see pages 143-145 of the ECO's 2008/2009 Annual Report). These instruments include, for example, Permits to Take Water (PTTWs), permits under the *Endangered Species Act, 2007* (*ESA*), and approvals for waste disposal sites. While prescribed ministries have discretion to decide whether a given policy, act or regulation is environmentally significant—and therefore subject to SEV consideration—instruments that are classified under the *EBR* are, by definition, environmentally significant and require SEV consideration.

In July 2008, the ECO wrote to ministries affected by this court decision, outlining the implications and explaining that, in order for the ECO to assess ministries' consideration of SEVs and compliance with the *EBR*, the ECO must be provided with a ministry SEV consideration document for instrument decisions. It is the ECO's understanding that, prior to the June 2008 court ruling, ministries that issue prescribed instruments generally did not prepare SEV consideration documents when making these decisions.

Satisfied that enough time had passed for the ministries to put in place processes for documenting SEV consideration for instrument decisions, in August 2011, the ECO informed the affected ministries—the Ministry of the Environment (MOE), the Ministry of Natural Resources (MNR), the Ministry of Municipal Affairs and Housing (MMAH), the Ministry of Northern Development and Mines (MNDM) and the Ministry of Consumer Services (MCS)—that the ECO intended to periodically request SEV consideration documentation for select instrument decisions. The ECO clarified that SEV consideration should include, at a minimum: reflecting on how a ministry's SEV principles apply to a proposal; and documenting this analysis in a transparent and accountable manner. The ECO notes that "consideration" of a SEV, however, does not necessitate conforming to or complying with the principles of the SEV.

In October 2011, the ECO began requesting proof of SEV consideration for several select instrument decisions. As detailed in Appendix IV, the ECO was satisfied with the SEV consideration documentation of several of the ministries, but was deeply troubled with some of MOE and MNR's responses.

When MOE and MNR finally responded to the ECO after several months delay, both ministries asserted that formal SEV consideration documentation is unnecessary for certain instruments. For example, MOE asserted that formal SEV consideration documentation is unnecessary for low risk PTTW applications because "no permit allows water taking that causes impact," and SEV consideration is built into MOE's PTTW program. Moreover, MOE indicated that it uses an internal screening procedure to determine environmental significance and the need to document SEV consideration for specific Environmental Compliance Approvals (formerly called Certificates of Approval). Likewise, MNR did not document its SEV consideration for two permits issued under the *ESA* because the ministry had determined that the environmental impact of the permitted activities would not be significant. The ECO takes issue with these positions and notes that documenting an SEV consideration is necessary, not only for demonstrating to the ECO and the public that such a consideration has occurred, but also ensuring that the consideration is deliberate and thorough.

In addition to arguing that SEV documentation is unnecessary for "environmentally insignificant" instrument decisions, MOE and MNR both indicated that for some instrument decisions, SEV consideration is embedded in other reports and documents, such as engineering assessment reports and aggregate licence reports (prepared under section 12 of the *Aggregate Resources Act*), rather than a stand-alone SEV consideration document. The ECO theoretically supports the notion of embedding SEV consideration in other processes and documenting this consideration in other reports. However, while MOE's engineering assessment reports and MNR's aggregate licence reports may effectively describe a project and its potential environmental impacts, upon reviewing the provided reports, the ECO found no reference to how specific SEV principles (e.g., cumulative effects, the ecosystem approach, the precautionary approach) had been considered. To adequately demonstrate that SEV consideration has occurred, SEV consideration documentation requires an explicit explanation of which specific SEV principles were considered, and why and how they were considered, applied and/or dismissed during the decision-making process.

The ECO is extremely disappointed that four years after the court decision, some ministries still try to avoid documenting their SEV consideration for prescribed instruments, screening out some "non-environmentally significant" instruments and inadequately "embedding" SEV consideration in other reports. This saga has gone on long enough. In order for the ECO to determine whether SEV consideration has occurred, the ECO must be provided with documentation that fully demonstrates how the SEV was considered during the decision-making process. To improve transparency and accountability, the ECO recommends that ministries provide links to their SEV consideration documents in decision notices for instruments posted on the Environmental Registry. Openly explaining to the public how specific SEV principles were considered and accounted for during the decision-making process would provide clarity about the ministry's rationale for the decision, and would improve assurance that SEV principles were taken into account even if the decision does not fully conform to them.

COMMISSIONER'S CONCLUSION

The public service that I joined in 1980 was very much in touch with the requirements and intent of the statutory framework that the Legislature of Ontario had put in place. As a young pollution abatement officer in an age when environmental protection laws were still being innovated and crafted, there were many frustrations with the legal requirements that were in place or absent. We were told that our job was to follow the requirements of the law and that our senior management would pursue adjustments, if necessary, with the Legislators. Mistakes and unforeseen delays would happen, but, certainly, we were never to deliberately thwart or frustrate the will of the Legislature.

So it astounds me to report on the degree of disregard and contempt that is shown to statutory requirements of the EBR *each year. Especially because the* EBR *is about the rights of citizens to participate in decision making as it relates to our environment. The simple, yet fundamental requirement to consider a Statement of Environmental Values in their decision making has been opposed and frustrated by ministries for years, even after I had to have my lawyers successfully argue the point against MOE lawyers in Divisional Court.*

And, various ministries persist in hiding environmentally significant decisions from public scrutiny and comment in open defiance of the clear intent of the statute. The most egregious example is MNR's attempt to shield the Provincial Wildlife Population Monitoring Program Plan from public review. The ministry's behaviour is all the more offensive because the plan itself is inadequate in meeting the requirements of the Environmental Assessment Act *and the* Crown Forest Sustainability Act, 1994.

Perhaps it is understandable that the ministries are no longer referred to as the "civil service," because there is nothing civil about the way citizens are often treated when they exercise their legislated right to file a request for investigation or review. Completing the application process is a difficult and regrettably cumbersome task for regular people who are not skilled at bureaucratic or *legal procedures. They endure because they are motivated by a sincere concern which may or may not hold true, but they deserve to be treated in a "civil" manner and to be provided appropriate "service." Denying all comers as some ministries do does not reflect service; making citizen applicants wait 252 days for an answer that the Legislature has indicated must be provided in 60 days is not civil behaviour.*

And, finally, the failure to prescribe ministries that clearly make environmentally important decisions or to restore that status to ministries that have had a name change is an omission of the duty of the public service, at the highest order, to respect the will of the Legislative Assembly. This sort of housekeeping item is simply a requirement of good government.

So, hence, comes the name of this report, from the perspective of a multi-decade veteran of the public service of Ontario. It appears that elements of the bureaucratic institution called the Ontario Public Service, which was created to support and implement the will of the people's Legislative Assembly, are somehow losing touch with their role and responsibilities, at least with regard to the Environmental Bill of Rights.

APPENDIX I

Prescribed Ministries and Acts

The *Environmental Bill of Rights, 1993 (EBR)* only applies to ministries, acts and instruments that are "prescribed" (i.e., specifically designated) by regulation as being subject to *EBR* requirements.

Ministries Prescribed for the Purposes of SEV Consideration and Registry Notice

As of August 2012, 14 ministries are prescribed under Part II of the *EBR* (i.e., listed in O. Reg. 73/94, the general regulation under the *EBR*):

- Ministry of Agriculture, Food and Rural Affairs (OMAFRA)
- Ministry of Consumer Services (MCS)
- Ministry of Economic Development and Innovation (MEDI)
- Ministry of Education (EDU)
- Ministry of Energy (ENG)
- Ministry of the Environment (MOE)
- Ministry of Government Services (MGS)
- Ministry of Health and Long-Term Care (MOHLTC)
- Ministry of Labour (MOL)
- Ministry of Municipal Affairs and Housing (MMAH)
- Ministry of Natural Resources (MNR)
- Ministry of Northern Development and Mines (MNDM)
- Ministry of Tourism, Culture and Sport (MTCS)
- Ministry of Transportation (MTO)

The ministries listed above must prepare and consider a Statement of Environmental Values (SEV) and must give notice on the Environmental Registry and consult with the public on any environmentally significant policies or acts that they propose.

Regulations

As of August 2012, there are 35 acts that are prescribed (in whole or in part) in O. Reg. 73/94 under the *EBR*; ministries must give notice of proposals for environmentally significant regulations made under those prescribed acts.

Instruments

Five ministries (MCS, MOE, MMAH, MNR and MNDM) are prescribed for purposes of classifying instruments (e.g., permits, licences and approvals) issued under acts administered by those ministries. Only instruments that are classified in O. Reg. 681/94—Classification of Proposals for Instruments, made under the *EBR*, are subject to the *EBR*. Currently, select instruments issued under 18 different acts are classified. The responsible ministries must give notice on the Environmental Registry of any proposals and decisions related to those classes of instruments.

Ministries Prescribed for the Purposes of Applications for Review

There are currently nine ministries prescribed for purposes of applications for review under the *EBR*:

- Ministry of Agriculture, Food and Rural Affairs (OMAFRA)
- Ministry of Consumer Services (MCS)
- Ministry of Energy (ENG)
- Ministry of the Environment (MOE)
- Ministry of Health and Long-Term Care (MOHLTC)
- Ministry of Municipal Affairs and Housing (MMAH)
- Ministry of Natural Resources (MNR)
- Ministry of Northern Development and Mines (MNDM)
- Ministry of Transportation (MTO)

Environmentally significant policies administered by those ministries are subject to *EBR* applications for review. Applicants may also request a review of the need for new policies, acts or regulations administered by those ministries. Specific acts must be prescribed in order for those acts and the regulations made under them to be subject to the *EBR* application for review requirements. Instruments prescribed under O. Reg. 681/94 are also subject to *EBR* applications for review.

Ministries Prescribed for the Purposes of Applications for Investigation

Applications for investigation may be filed for alleged contraventions under 19 different laws prescribed under the *EBR*, and for contraventions of any regulations under those laws. Applications for investigation may also be filed for alleged contraventions of prescribed instruments issued under 17 laws, administered by four ministries (MOE, MMAH, MNR, MNDM) and one agency (the Technical Standards and Safety Authority of the Ministry of Consumer Services).

Please see the ECO's website (www.eco.on.ca) for an up-to-date list of ministries, laws and instruments prescribed under the *EBR*.

APPENDIX II

Ministry Use of the Environmental Registry in 2011/2012

The Environmental Registry is a searchable online database established under the *Environmental Bill of Rights, 1993* (*EBR*) that provides public access to timely information about environmentally significant proposals and decisions made by the Ontario government. The Environmental Registry can be accessed at www.ebr.gov.on.ca.

The Environmental Registry is a key mechanism for the public to exercise their *EBR* rights to participate in government environmental decision making. Prescribed ministries are required to post notices of proposals for environmentally significant policies, acts, regulations and instruments on the Environmental Registry, and to provide the public with a minimum of 30 days to comment on such proposals. The public has the option of submitting their comments electronically, directly through the Environmental Registry. Ministries must consider all public comments received; once a ministry has made a final decision, it must post a decision notice explaining its decision and explaining the effect, if any, of the public's comments on the ministry's decision.

When a decision regarding an instrument is challenged in an appeal or an application for leave to appeal, the ECO posts appeal notices on the Environmental Registry to keep the public apprised of the status of the appeal and its outcome.

The Environmental Registry also provides other information that may assist the public in using their *EBR* rights, such as commenting on an environmentally significant proposal, including:

- background information about the *EBR*;
- links to the full text of the *EBR* and its regulations;
- links to prescribed ministries' Statements of Environmental Values;
- links, in some cases, to the full text of proposed and final policies, acts, regulations and instruments; and
- links, in some cases, to other information relevant to a proposal.

The Environmental Registry is maintained by the Ministry of the Environment (MOE). The ECO monitors ministries' use of the Environmental Registry to ensure that prescribed ministries are satisfying their obligations under the *EBR*, and that the public's participation rights are being respected.

EBR Requirements to Post on the Environmental Registry

Part II of the *EBR* sets out minimum levels of public participation that must be met before the prescribed ministries make decisions on certain kinds of environmentally significant proposals for policies, acts, regulations and instruments.

A proposal for a new policy, act, regulation or instrument (or amendments to them) must be posted if the minister of a prescribed ministry considers that: the policy, act, regulation or instrument could have a significant effect on the environment if implemented; and the public should have an opportunity to comment on the proposal before implementation.

There are few exceptions to the requirement to post a proposal notice on the Environmental Registry. A ministry does not need to post a proposal notice if: the policy, act or regulation is predominantly financial or administrative in nature; the delay in waiting for public comment would result in danger to public health or safety, harm or serious risk to the environment, or injury or damage to property; or the policy, act, regulation or instrument has already been, or will be, considered in a public participation process substantially equivalent to the *EBR* process. In the latter two cases, the ministry must post an "exception notice" on the Environmental Registry (see below).

Ministry Use of the Environmental Registry in 2011/2012

In this reporting year, 64 proposal notices were posted on the Environmental Registry for policies, acts and regulations. Of those 64 proposal notices, 41 were for policies, 22 were for regulations, and only one was for a proposed act.

Comment Periods

The *EBR* requires ministries to provide a minimum of 30 days for the public to submit comments on proposals posted on the Environmental Registry. To examine whether ministries are exceeding this minimum consultation requirement, the ECO tracks the number of proposal notices that have public comment periods of 45 days or longer. In this reporting year, the ministries that posted proposals provided 45 days or longer for the public to comment (i.e., well beyond the minimum 30 days required) 81 per cent of the time (see Table 3). While ministries are to be praised for going above and beyond minimum requirements most of the time—and, in fact, four of the eight ministries that posted proposal notices provided 45-day or longer comment periods 100 per cent of the time—this number is down from a 90 per cent rate in 2010/2011.

Quality of Registry Notices

Proposal notices must clearly explain the nature of the proposal and the potential impacts of the proposal on the environment. It is also helpful for notices to include links to supporting documentation, such as the draft text of a proposed regulation. Likewise, decision notices should explain the ministry's final decision and the effect of public consultation on that decision.

The proposal notices posted on the Environmental Registry during this reporting year generally included clear explanations of the actions ministries were proposing, and often included links to additional information. For example, MOE and MNR regularly posted proposal notices with detailed explanations of the actions proposed and included links to related information on the ministries' websites and elsewhere. However, the ECO noted this year that some ministries, including MNR, often completed the "purpose" portion of policy and regulation proposal notices incorrectly, by describing the purpose of the proposal (i.e., to notify the public and seek public input) rather than explaining to the public the underlying purpose or rationale of the proposed policy or regulation itself.

Decision notices posted this year were also generally well explained, including descriptions of how a ministry considered public comments in making the final decision. However, some decision notices should have included more details. For example, several instrument decision notices posted this year under the *Technical Standards and Safety Act, 2000*, failed to describe

Table 3

Number of Proposal Notices for Policies, Acts and Regulations Posted on the Environmental Registry During the 2011/2012 Reporting Period (April 1, 2011 – March 31, 2012).

Ministry	Number of Proposals	Proposals with a 45-day or Longer Comment Period	
		Number	Percentage
Agriculture, Food and Rural Affairs	3	3	100%
Consumer Services	1	0	0%
Economic Development and Innovation	0	n/a	n/a
Energy	1	1	100%
Environment	11	5	45%
Government Services	0	n/a	n/a
Health and Long-Term Care	0	n/a	n/a
Labour	0	n/a	n/a
Municipal Affairs and Housing	0	n/a	n/a
Natural Resources	39	35	90%
Northern Development and Mines	5	5	100%
Tourism, Culture and Sport	1	0	0%
Transportation	3	3	100%
TOTAL	**64**	**52**	**81%**

the decision altogether or in sufficient detail, falling well below the ECO's expectations. Inadequate descriptions of ministry decisions on instruments not only result in less government transparency and accountability for its decisions, but they can impede the public's ability to exercise their *EBR* appeal rights.

Late Decision Notices: Unknown Status of Policies, Acts and Regulations

The Environmental Registry should provide a reliable, up-to-date window on environmental decision making in Ontario. While much of the information on the Environmental Registry is up to date, sometimes old proposal notices are left hanging. Once ministries have considered public comments on a proposal and made a decision, they must follow up with a "decision notice." Unfortunately, ministries do not always follow up, and thus some proposals are left on the Environmental Registry for years without updates or explanation.

Looking at an 18-year time frame from 1994 to 2012, ministries have followed the process as intended for 90 per cent of all notices relating to policies, acts and regulations: they have posted a decision notice to follow up on the proposal notice. But the other 10 per cent of the proposal notices have been languishing on the Environmental Registry at the proposal stage for at least two years and, in some cases, many years. Looked at another way, 60 per cent of all proposals (for policies, acts and regulations) currently on the Environmental Registry are at least two years old and may no longer be relevant. These orphaned proposals reduce the credibility of the Environmental Registry as a reliable source of information; neither the public nor the ECO is able to tell whether the ministry is still considering the proposal, or has decided to drop the proposal, or is late in posting a decision notice.

Almost 50 proposals on the Environmental Registry (not counting instrument proposals) predate October 2003, when Ontario last experienced a change in government after a provincial election; it is fair to assume that some of these proposals have become irrelevant, but the Environmental Registry gives no such indication.

The public would be better served if MOE (which administers the Environmental Registry) could resolve the problem of orphaned proposal notices; one option might be to clearly label outdated proposals as such, and where possible, offer Registry users electronic links to more recent proposals.

Information Notices

In cases where ministries are not required to post a proposal notice on the Environmental Registry for public comment, they may still provide a public service by posting an "information notice" under section 6 of the *EBR*. These notices keep Ontarians informed of important environmental developments.

Significant differences exist between regular "proposal notices" posted on the Environmental Registry and "information notices." With regular proposal notices, a ministry is required to consider public comments and post a decision notice explaining the effect of comments on the ministry's decision. The ECO then reviews the extent to which the ministry considered those comments and its Statement of Environmental Values when it made the final decision. Information notices should only be used by ministries in cases when a regular proposal notice is not required under the *EBR.*

In the 2011/2012 reporting year, there were 165 information notices posted on the Environmental Registry by seven ministries (see Table 4). Some examples of information notices in this reporting year included: Minister's Zoning Orders under the *Planning Act*; amendments to mine closure plans under the *Mining Act*; approvals of assessment reports for Source Protection Areas under the *Clean Water Act, 2006*; and unclassified permits under the *Endangered Species Act, 2007.*

An example of a good use of an information notice posted on the Environmental Registry is MNR's provision of information regarding prescribed burns scheduled for 2012 (#011-5659). Although MNR is not required under the *EBR* to provide this information on the Environmental Registry, the information notice is helpful for interested or affected members of the public wishing to learn what areas are scheduled for burns and for what purpose (e.g., tallgrass prairie restoration, etc.).

Table 4
Number of Information Notices Posted by Ministry, 2011/2012 Reporting Year.

Ministry	Number of Information Notices
Energy	2
Food, Agriculture and Rural Affairs	1
Municipal Affairs and Housing	21
Natural Resources	75
Northern Development and Mines	16
Environment	49
Transportation	1
TOTAL	**165**

Exception Notices

In certain situations, the *EBR* relieves prescribed ministries of their obligation to post environmentally significant proposals on the Environmental Registry for public comment.

There are two main instances in which ministries can post an "exception notice" to inform the public of a decision and explain why it was not posted for public comment. First, there is the "emergency" exception. Ministries are permitted to post an exception notice under section 29 of the *EBR* when the delay in waiting for public comment would result in danger to public health or safety, harm or serious risk to the environment, or injury or damage to property. Second, there is the "equivalent public participation" exception. Ministries can post an environmentally significant proposal as an exception notice under section 30 of the *EBR* when the proposal will be or has already been considered in another public participation process that is substantially equivalent to the requirements of the *EBR*.

During the 2011/2012 reporting year, MOE posted five instrument exception notices on the Environmental Registry, all using the emergency exception. The ECO believes that all exception notices posted on the Environmental Registry in 2011/2012 were acceptable uses of the *EBR*'s exception provisions. For example, MOE issued an order under the *Environmental Protection Act* and the *Ontario Water Resources Act* to avoid the catastrophic failure of a tailings dam in Timmins that would have resulted in a serious risk of harm to the environment.

Renewable Energy Approvals and the Environmental Registry

Renewable energy approvals (REAs) issued under the Environmental Protection Act (e.g., approvals for solar, wind power or bioenergy projects) are prescribed instruments under the *EBR*. To apply for a REA, applicants must prepare a number of reports and other documents outlining various aspects of the proposed projects and its potential impacts. Just one component of a REA application is the natural heritage assessment, for which up to six separate reports may be required.

Proposal notices for REAs have not, to date, included links to any of the supporting materials for the application, such as the various natural heritage assessment reports. And while the REA regulation requires an applicant to post all application materials on the applicant's own website (but only if they have one), proposal notices on the Environmental Registry do not inform the public of this requirement. Thus, a member of the public who wishes to view the supporting application materials before commenting on a proposal for a REA must either contact the ministry staff named in the proposal notice for additional information, or know that they might find the application materials on the applicant's website.

Forcing interested Ontarians to track down information they may need to make an informed comment on specific aspects of a proposal for a REA is unnecessary and contrary to the intent of the *EBR*. This challenge in obtaining supporting information for instrument proposals is not unique to REAs; however, given that supporting information for REAs is typically otherwise readily available, it would make infinitely more sense for MOE to include a link to the REA application and all supporting documents (such as the natural heritage assessment reports) in the proposal notice on the Environmental Registry or, at a minimum, provide a link to the materials on the applicant's website.

The process for a third party to challenge a REA decision is different than the usual "leave to appeal" process for other instrument decisions under the *EBR*. However, when MOE posts decision notices for REAs on the Environmental Registry, it uses the same template used for all other instrument decision notices even though the instructions for seeking leave to appeal do not apply to REA decisions. MOE addresses this problem by including large, bold lettering at the top of REA decision notices instructing the reader to ignore the section entitled "Leave to Appeal Provisions" and to instead follow the instructions contained in a note added to the "Decision on Instrument" section.

The Environmental Registry is, in many ways, the face of the *EBR*. It is the primary venue for the public to receive notice of and participate in government environmental decision making. When a REA decision notice is posted on the Environmental Registry, it triggers the public's right to challenge the government's decision to issue the approval. It is therefore critical that REA decision notices clearly explain to Ontario residents their appeal rights and the process for exercising these rights. While MOE can be credited for attempting to communicate the proper information in REA decisions notices, the result is a messy and complicated notice that is likely to confuse some Registry users.

In some REA decision notices posted in 2010, MOE stated that it "is currently working to amend the template for decision notices to reflect the third party hearing process for renewable energy projects." However, these amendments still have not been made and MOE no longer includes this statement in REA decision notices. In April 2012, MOE advised the ECO that it is still working on updates to the template.

APPENDIX III

Appeals, Lawsuits and Whistleblowers

The *Environmental Bill of Rights, 1993* (*EBR*) provides Ontarians with several legal tools that enable them to enforce and protect their environmental rights, including:

- appeal rights;
- public nuisance claims;
- "harm to a public resource" claims; and
- whistleblower protection.

Appeals

Many Ontario statutes provide individuals and companies with a right to appeal (i.e., challenge) government decisions that directly affect them, such as a decision to deny, amend or revoke a permit, licence or approval for which they applied or that was issued to them. These are called "instrument holder appeals." If an instrument holder appeal relates to an instrument that is prescribed as a Class I or Class II instrument under O. Reg. 681/94 made under the *EBR*, the public has a right under the *EBR* to receive notice of that appeal. The ECO is required to post notice of instrument holder appeals on the Environmental Registry; the ECO also posts notice on the Registry of the final disposition of these appeals (i.e., whether the appeal was allowed, denied or withdrawn) for the public's information.

During the 2011/2012 reporting year, the ECO posted 13 new instrument holder notices of appeal on the Registry. Seven of these appeals related to Ministry of the Environment (MOE) Director's orders issued under the *Environmental Protection Act* (*EPA*), four related to renewable energy approvals for wind power projects issued under the *EPA*, and the remaining two were appeals of municipal official plan amendments made under the *Planning Act*.

Leave to Appeal

The *EBR* expands the basic appeal rights granted to instrument holders by enabling any member of the public (i.e., a "third party") to apply for "leave" (i.e., permission) to appeal certain ministry decisions that relate to instruments prescribed under the *EBR*. These are called "third party appeals." Ontario residents who wish to seek leave to appeal a decision must apply to the proper appeal body—usually the Environmental Review Tribunal (ERT)—within 15 days of the decision being posted on the Environmental Registry.

However, to be granted leave to appeal, applicants must first establish that they have an interest in the decision in question. They must then satisfy the two-part test for leave to appeal set out in section 41 of the *EBR* by successfully demonstrating that:

- there is good reason to believe that no reasonable person, having regard to the relevant law and to any government policies developed to guide decisions of that kind, could have made the decision; and
- the decision could result in significant harm to the environment.

Table 5

Applications for Leave to Appeal (LTA) Initiated in the ECO's 2011/2012 Reporting Year

Instrument Holder	Instrument	Environmental Registry #	LTA Applicant(s)	Date of LTA Application	Leave Decision
Timco Foods Ltd.	Air approval	011-2928	Jim and Laurie Muche; John and Jo-anne Bisaillon	June 17, 2011	LTA denied (August 2011)
Miller Paving Ltd.	Air approval	010-8228	James McBride	September 9, 2011	LTA withdrawn (December 2011)
Waste Management of Canada Corporation	Waste approval	011-3302	Kimberly Mantas	October 17, 2011	LTA denied (February 2012)
Panolam Industries Ltd.	Air approval	011-1771	Andrew Tkachenko	December 30, 2011	LTA withdrawn (January 2012)
Waste Management of Canada Corporation	Waste approval	011-0671	Concerned Citizens Committee of Tyendinaga and Environs	January 30, 2012	LTA granted (March 2012)

Table 6

Leave to Appeal Application Concluded in the ECO's 2011/2012 Reporting Year (filed in earlier years)

Instrument Holder	Instrument	Environmental Registry #	LTA Applicant(s)	Date of LTA Application	Leave Decision
Orgaworld Canada Ltd.	Waste approval; and air approval	010-4040 (waste); 010-4049 (air)	Mark Scharfe, registered Chair of the Ramsayville Community Association	September 2009	Waste: LTA dismissed because applicant did not file notice of leave to appeal in time; Air: LTA denied (November 2011)

During the 2011/2012 reporting period, concerned members of the public sought leave to appeal five instrument decisions. Three of the applications this year involved air approvals issued by MOE under section 9 of the *EPA*. The remaining two applications involved waste approvals issued by MOE under section 27 of the *EPA*. Table 5 provides a brief summary of the leave to appeal applications filed during the ECO's 2011/2012 reporting year; Table 6 provides a summary of the leave to appeal applications concluded in 2011/2012, but filed in earlier years. Additional information can be found in the notices posted on the Environmental Registry at www.ebr.gov.on.ca. The full text of the decision for each appeal can be found on the ERT's website at www.ert.gov.on.ca.

Claims for Public Nuisance

Before the *EBR* came into force, claims for public nuisances in Ontario had to be brought by, or with leave of, the Attorney General. Since 1994, under section 103 of the *EBR* someone who has suffered direct economic loss or personal injury as a result of a public nuisance that has harmed the environment can bring forward a claim without the approval of the Attorney General. No new lawsuits claiming public nuisance as a cause of action came to the ECO's attention during this reporting year.

The Right to Sue for Harm to a Public Resource

The *EBR* gives Ontarians the right to sue any person that is breaking, or is about to break, an environmental law, regulation or instrument that has caused, or will cause, harm to a public resource. To date, the only court action brought under the "harm to a public resource" provisions of the *EBR* for which notice has been provided to the ECO is a proceeding started in 1998 by the Braeker family against MOE and Max Karge, an owner of an illegal tire dump.

Whistleblower Rights

The *EBR* protects employees against reprisals by employers (e.g., dismissal, discipline, etc.) for reporting environmental violations in the workplace or otherwise exercising their rights under the *EBR*. The ECO is not aware of any employer reprisal cases in this reporting year.

APPENDIX IV

SEV Consideration for Instruments

Five ministries and one agency have responsibility for administering instruments prescribed under the *Environmental Bill of Rights, 1993 (EBR)*:

- The Ministry of the Environment (MOE);
- The Ministry of Natural Resources (MNR);
- The Ministry of Northern Development and Mines (MNDM);
- The Ministry of Municipal Affairs and Housing (MMAH); and
- The Technical Standards and Safety Authority (TSSA) of the Ministry of Consumer Services (MCS).

Ministries' Responses to the ECO's Requests

This year, to assess ministries' compliance with section 11 of the *EBR* with respect to prescribed instruments, the ECO requested proof of the ministries' consideration of their Statement of Environmental Values (SEV) for select instrument decisions. As detailed below, the ECO was troubled by some ministries' responses, given the Divisional Court's clear ruling on SEV consideration for prescribed instruments.

Ministry of the Environment

Between October 2011 and March 2012, the ECO requested from MOE proof of SEV consideration for 61 instruments. The ministry did not begin responding to these requests until March 13, 2012, when it sent the ECO a letter apologizing for the delay and explaining the ministry's processes for documenting SEV considerations.

MOE stated that due to the complexity and high volume of applications received for Environmental Compliance Approvals (ECAs)—formerly called Certificates of Approval—the ministry "does not formally document the consideration of our SEV for each application. Instead MOE has developed an internal procedure to screen for environmentally significant applications against a set of criteria .... When a proposal triggers these criteria and the reviewer determines that the application is environmentally significant, consideration of our SEV is documented in a SEV Consideration Form, or in an [environmental assessment report] or other document."

For Permits to Take Water (PTTWs), MOE reasoned that because its PTTW manual and program apply principles that echo those found in the ministry's SEV, consideration of MOE's SEV is built into the current delivery of the PTTW program. Moreover, "as no permit allows water taking that causes impact because of the general and specific terms and conditions imposed by every permit, [MOE is] especially confident that decisions related to low risk Category 1 applications do not require the ministry to make decisions that might significantly affect the environment. On this basis, the ministry does not believe that formal SEV consideration documentation is required for Category 1 applications." MOE assured the ECO that it will continue to provide SEV consideration documentation upon request for PTTW instrument decisions that receive public comments and that involve higher category proposals.

Of the 61 MOE instrument decisions for which the ECO requested proof of SEV consideration, as of May 2012, MOE had provided environmental assessment reports for 34 of them, separate SEV consideration documentation for 20, and nothing for 7 of them.

Upon reviewing engineering assessment reports provided by MOE, the ECO determined that these reports do not adequately document SEV consideration. MOE's engineering assessment reports provide: a technical overview of the proposal; a description of the project's potential implications; references to relevant standards and emission limits; and information on public consultation via the Environmental Registry. These reports, however, lack any reference to how specific SEV principles were considered during the decision-making process.

The stand-alone SEV consideration documents MOE provided demonstrate variable detail. For several PTTWs, the SEV consideration document describes how broad SEV principles (e.g., environmental management, pollution reduction, environmental restoration, and strategic management) were considered, why certain principles were not applicable, and cases where it was not possible to take specific SEV guiding principles into account. Within each of these broad categories, the documentation appropriately includes reference and consideration of specific SEV principles (e.g., cumulative effects, the ecosystem approach, the precautionary approach). By contrast, other SEV consideration documents (including approvals for renewable energy projects and the alteration to an air standard) refer to the same general categories, but lack discussion of how specific SEV principles were considered. Still other documents list the guiding questions, but fail to answer them.

Ministry of Natural Resources

Between December 2011 and March 2012, the ECO requested from MNR proof of SEV consideration for seven instruments. MNR took over two months to provide an SEV consideration document for the first request, but later responded to ECO requests in just over two weeks.

For a permit to engage in an activity (road construction) that would otherwise be prohibited by section 9 of the *Endangered Species Act, 2007*, the ministry used a checklist template to document its consideration, explaining whether and how it considered several SEV principles when making its decision, including: recognition of the finite capacity of natural systems; use of adaptive management; rehabilitation of degraded environments; the value of natural resources; and public participation.

For two instrument decisions, which concern aggregate licences, MNR explained that the consideration of environmental values is contained within reports prepared to fulfill section 12 of the *Aggregate Resources Act* (*ARA*). (Section 12 of the *ARA* requires the Minister of Natural Resources or the Ontario Municipal Board to consider several factors when deciding whether a licence should be issued or refused, including: the effects of the operation on the environment and nearby communities, ground and surface water resources, and agricultural resources.) While the two reports MNR provided consider the impacts of aggregate operations, they do not explain whether or how the ministry considered its SEV's principles, such as the ecosystem approach and adaptive management, when making these decisions.

For the other four instrument decisions, MNR did not provide any documentation of SEV consideration. For two of these decisions, the ministry explained that it did not document its SEV consideration because MNR had determined that the environmental impact of the permitted activity would not be significant.

Ministry of Municipal Affairs and Housing

Between December 2011 and March 2012, the ECO requested from MMAH proof of SEV consideration for four instrument decisions. For the first request, MMAH took a month and a half to provide an SEV consideration document. For the three later requests, the ministry provided proof of SEV consideration within less than a month.

MMAH staff document their SEV consideration by following a guideline that asks a decision-maker to: summarize the instrument decision; confirm which SEV environmental principle(s) were considered in the decision-making process (as determined by completing a checklist assessing the environmental impact); explain how the decision is consistent with the environmental principles(s) considered; indicate whether there are specific *EBR* purposes that benefit from the decision; and indicate whether there are aspects of the decision that conflict with provisions or commitments set out in MMAH's SEV. The guideline also provides a list of factors to help MMAH staff assess the significance of an environmental impact. For all four of the instrument decisions that the ECO requested proof of SEV consideration, MMAH determined that the environmental principle of "ensuring well-planned and healthy communities while protecting greenspace" applied.

Ministry of Northern Development and Mines

Between December 2011 and March 2012, the ECO requested from MNDM proof of SEV consideration for four instruments. For three of these requests, the ministry promptly provided documentation of SEV consideration the same day. For the other request, MNDM's proof of SEV consideration arrived within the week.

MNDM staff document their SEV consideration by completing brief answers to a series of relevant questions, including: how the proposal/project complements or furthers the achievement of the ministry's SEV; whether there are any aspects of the proposal/project that conflict with provisions or commitments in MNDM's SEV; and whether special measures have been instituted to monitor and assess the proposal or project's achievement of the SEV's provisions and commitments.

Technical Standards and Safety Authority

In December 2011, the ECO requested proof of SEV consideration from the Technical Standards and Safety Authority (TSSA), which is an authority under the Ministry of Consumer Services (MCS) for one instrument: permission to deviate from requirements of the Liquid Fuels Handling Code. In February 2012, the TSSA wrote to the ECO to explain that it only became standard practice at the TSSA to complete an SEV consideration form for instruments as of January 1, 2012—after the decision on the instrument had been made. The TSSA explained that in mid-2011, it developed an SEV consideration form and guide to aid staff in considering MCS's SEV when making instrument decisions and documenting that consideration process. Staff were given until January 1, 2012 to become familiar with the new process. The TSSA provided the ECO with copies of its new SEV consideration form and guide.

The TSSA stated:

> Although the SEV consideration form was not yet in use at the time of this particular variance application, TSSA was nevertheless already considering potential environmental impacts as part of our integrated variance application assessment process. This is in keeping with the MCS SEV, which provides that “analysis of environmental effects and the purposes of the *EBR* will be integrated into a proposal’s other analysis, whether of a social, economic, scientific or other nature. This will permit joint consideration of all relevant factors in a balanced, reasonable and responsible manner.”

APPENDIX V

Ministries, Acts and Instruments Not Prescribed

The *Environmental Bill of Rights, 1993 (EBR)* establishes important rights to ensure government accountability, transparency, and public participation in environmental decision making. However, these responsibilities only apply to the provincial ministries that are "prescribed" (i.e., designated in Ontario Regulation 73/94 made under the *EBR*). Furthermore, many of the *EBR* rights only apply to acts and instruments administered by these ministries that are also prescribed. Therefore, for the *EBR* to function, it is essential that those ministries and agencies that make decisions that may have an impact on the environment, and the environmentally significant acts and instruments that they administer, are all prescribed under the *EBR*.

To ensure that the *EBR* remains up to date, the ECO regularly tracks developments in the Ontario government (such as the creation of new ministries, reorganizations of government portfolios, and the enactment of new laws), and continually encourages the government to update the two *EBR* regulations (O. Reg. 73/94 and O. Reg. 681/94) to ensure that all ministries, laws and instruments that are environmentally significant are prescribed. Keeping the *EBR* up to date helps to ensure that Ontario residents can participate in all environmentally significant decision making.

While most key ministries, acts and instruments are prescribed, there continue to be both outright refusals as well as inordinate delays from government to prescribe certain ministries, laws and instruments under the *EBR*. For example, there are typically exceedingly long delays before new environmentally significant acts are prescribed; in the interim, new regulations are often filed, depriving the public of its rights to proper notice and comment under the *EBR*.

The government's continued failures and/or delays to prescribe all appropriate ministries, acts and instruments deprives the public of its *EBR* rights to: participate in environmentally significant decisions, ensure that Statements of Environmental Values (SEV) are considered, request *EBR* investigations and reviews, and seek leave to appeal prescribed instruments. Moreover, the ECO is unable to scrutinize non-prescribed decisions in the same manner as decisions made by prescribed ministries under prescribed acts and instruments.

The ECO's outstanding concerns are summarized below.

Ministries and Agencies Not Prescribed Under the *EBR*

Ministry of Aboriginal Affairs (MAA): MAA was established by the Ontario government in November 2007 with a mandate to protect the rights of Aboriginal peoples and promote the health and economic well-being of Aboriginal Ontarians. In November 2007, the ECO wrote to MAA requesting that the ministry be prescribed under the *EBR*. In early 2009, MOE advised the ECO that it had been working with MAA to identify some potential activities and parameters for MAA to become prescribed. In November 2010, MOE indicated that discussions with MAA were still ongoing, but as of July 2012, no further action was evident. The ECO continues to urge MOE and MAA to move forward on this matter.

Ministry of Finance (MOF): When the *EBR* was first proclaimed in February 1994, MOF was listed as a prescribed ministry. In November 1995, however, the ministry was removed from the list of prescribed ministries, and therefore was no longer required to consider an SEV or post notices on the Environmental Registry for environmentally significant decisions. In a 1996 Special Report (Ontario Regulation 482/95 and the *EBR*), and in several annual reports since (see pages 200-202 of the Supplement to the ECO's 2003/2004 Annual Report, and page 29 of the ECO's 2009/2010 Annual Report), the ECO has recommended that MOF be prescribed.

Prescribing MOF and requiring it to consider its SEV for environmentally significant decisions—including those that are predominantly financial in nature—would further the purposes of the *EBR*. Furthermore, prescribing MOF for applications for review would enable the public to ask the ministry to develop or amend laws and policies that would advance environmental goals, such as green taxes and economic incentives to conserve energy and resources. Unfortunately the ECO's repeated requests that MOF be prescribed under the *EBR* have been ignored.

Ministry of Infrastructure (MOI): In August 2010, the Ministry of Energy and Infrastructure (MEI)—a prescribed ministry—was split into two separate ministries: the Ministry of Energy (ENG) and the Ministry of Infrastructure (MOI). In November 2010, the ECO met with the Deputy Minister of the new MOI and urged the ministry to become prescribed under the *EBR*. At that time, the Deputy Minister indicated to the ECO that MOI was working on becoming prescribed.

MOI administers or oversees a number of acts (e.g., the *Places to Grow Act, 2005*), regulations, policies (e.g., MOI's ten-year plan for public infrastructure spending including water, wastewater and transportation infrastructure), and agencies (e.g., Infrastructure Ontario) that have clear environmental significance. It is important that the public be given the full *EBR* rights to participate in MOI's environmentally significant decision making relating to public infrastructure, growth, and urban and rural development. However, as of July 2012—two years after MOI was created—there appears to be no real progress in prescribing MOI. The ECO strongly urges MOE and MOI to prescribe MOI without delay.

Ontario Heritage Trust (OHT): The OHT, an agency of the Ministry of Tourism, Culture and Sport (MTCS), is dedicated to identifying, preserving and promoting Ontario's heritage. In 2005, the amended *Ontario Heritage Act, 2005* (*OHA*) formally recognized the role of OHT in conserving the "natural" environment. OHT holds in trust a portfolio of more than 130 natural heritage properties, which include rare Carolinian forests, wetlands, the habitats of endangered species, sensitive features of the Oak Ridges Moraine, nature reserves on the Canadian Shield, and numerous properties on the Bruce Trail and Niagara Escarpment.

In 2006, the ECO urged MTCS's predecessor, the Ministry of Culture (MCL), to prescribe OHT under the *EBR* (see pages 76-79 of the ECO's 2005/2006 Annual Report). In August 2007, MCL advised the ECO that it would not be prescribing OHT because OHT is not a policy-making agency, all policies and programs related to the work of OHT are developed by MCL and MNR, and OHT merely implements those programs. In September 2009, MCL and MOE did however prescribe the *OHA* under the *EBR*.

The ECO continues to be disappointed by this decision. The current funding, policy-making and reporting functions related to natural heritage protection are confused and fragmented between MNR, MTCS and OHT. As a result, responsibility for posting environmentally significant decisions related to natural heritage protection is not always clear and proposals can slip through the cracks. The ECO continues to urge MTCS to prescribe OHT; alternatively, MTCS must take responsibility for ensuring that all environmentally significant proposals relating to OHT's work are posted on the Environmental Registry for public comment.

Acts Not Prescribed Under the *EBR*

***Animal Health Act, 2009*:** In September 2010, the ECO wrote to the Ministry of Agriculture, Food and Rural Affairs (OMAFRA) asking the ministry to review the need to prescribe the *Animal Health Act, 2009* under the *EBR*. In November 2010, OMAFRA advised the ECO that, while it was not contemplating developing any environmentally significant regulations for the foreseeable future, the ministry would give the option of prescribing the Act under the *EBR* "due consideration." The ECO encourages OMAFRA to undertake a review of the need to prescribe this Act.

Entire *Building Code Act, 1992:* The *Building Code Act, 1992* (*BCA*) is prescribed under the *EBR* for limited purposes relating to septic systems. In the ECO's 2005/2006 Annual Report, the ECO recommended that the Ministry of Municipal Affairs and Housing (MMAH) fully prescribe the *BCA* under the *EBR*. In March 2007, MMAH advised the ECO that it had no plan to further prescribe the *BCA*. In 2009 and 2010, the government passed amendments to the *BCA* to include new provisions relating to energy and water efficiency, respectively. Given these environmentally significant amendments, the ECO again urges MMAH to reconsider prescribing the entire *BCA*. Prescribing the entire *BCA* would ensure transparency and accountability for MMAH policies and laws relating to green building materials and energy and water technologies.

Instruments Not Prescribed Under the *EBR*

Water Management Plans under the *Lakes and Rivers Improvement Act*: In June 2002, a new section 23.1 of the *Lakes and Rivers Improvement Act* was created. This provision enables the Minister of Natural Resources to order owners of dams to develop water management plans (WMPs). In our 2002/2003 Annual Report, the ECO encouraged MNR to amend O. Reg. 681/94 to include WMPs issued under section 23.1 as prescribed instruments. In March 2006, MNR advised the ECO that it would not be prescribing WMPs under the *EBR* because MNR's Water Management Planning Guidelines for Waterpower already "establishes a comprehensive approach to public engagement." MNR also noted that the majority of WMPs were completed or close to completion.

The ECO continues to disagree with MNR's decision. During the 2011/2012 reporting period, MNR posted yet another information notice for a WMP. The fact that MNR continues to post these notices every year exemplifies why WMPs should be prescribed, ensuring the public's right to notice and comment under the *EBR*.

Nutrient Management Instruments under the *Nutrient Management Act, 2002*: In 2006, after years of ECO requests, the *Nutrient Management Act, 2002* (*NMA*) was prescribed under the *EBR* for most purposes, except for applications for investigation. None of the instruments issued under the *NMA* were prescribed, and therefore, these are not subject to *EBR* notice and comment processes, SEV consideration, or applications for review or investigation.

In 2008, OMAFRA stated that the purposes of *EBR* investigations and prescribing instruments is to achieve transparency, and that this is already achieved by clearly articulating the requirements for the nutrient management instruments in O. Reg. 267/03, the general regulation made under the *NMA.* OMAFRA also noted that there is sensitivity in the farm community to posting these instruments on the Environmental Registry because they contain proprietary information, and that public access to this information could cause business problems for these farmers.

The ECO strenuously disagrees with OMAFRA's approach. Unless nutrient management instruments are prescribed, the public and municipalities will not be notified on the Environmental Registry of local nutrient management activities (such as land application of sewage sludges), and residents will be unable to request an investigation under the *EBR* into possible non-compliance, or to request reviews of specific instruments.

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Environmental
Commissioner
of Ontario

LOSING our TOUCH

ANNUAL REPORT
2011/2012
PART 2

This report is dedicated to the memory of Charlie Ferguson, a leader and innovator in finding solutions to major issues in industrial pollution control, environmental protection and sustainability.

Environmental
Commissioner
of Ontario

Commissaire à
l'environnement
de l'Ontario

Gord Miller, B.Sc., M.Sc.
Commissioner

Gord Miller, B.Sc., M.Sc.
Commissaire

October 2012

The Honourable Dave Levac
Speaker of the Legislative Assembly of Ontario

Room 180, Legislative Building
Legislative Assembly
Province of Ontario
Queen's Park

Dear Speaker:

In accordance with Section 58 of the *Environmental Bill of Rights, 1993*, I am pleased to present Part 2 of the 2011/2012 Annual Report of the Environmental Commissioner of Ontario for your submission to the Legislative Assembly of Ontario.

Sincerely,

Gord Miller
Environmental Commissioner of Ontario

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LOSING OUR TOUCH

There was a time when the world looked to Ontario for leadership and innovation on matters of environmental protection and resource management. We were not only a leading jurisdiction for the creation of new concepts of law, we also had a proficient public service that could create the organizational structures and policies that could implement the new ideas.

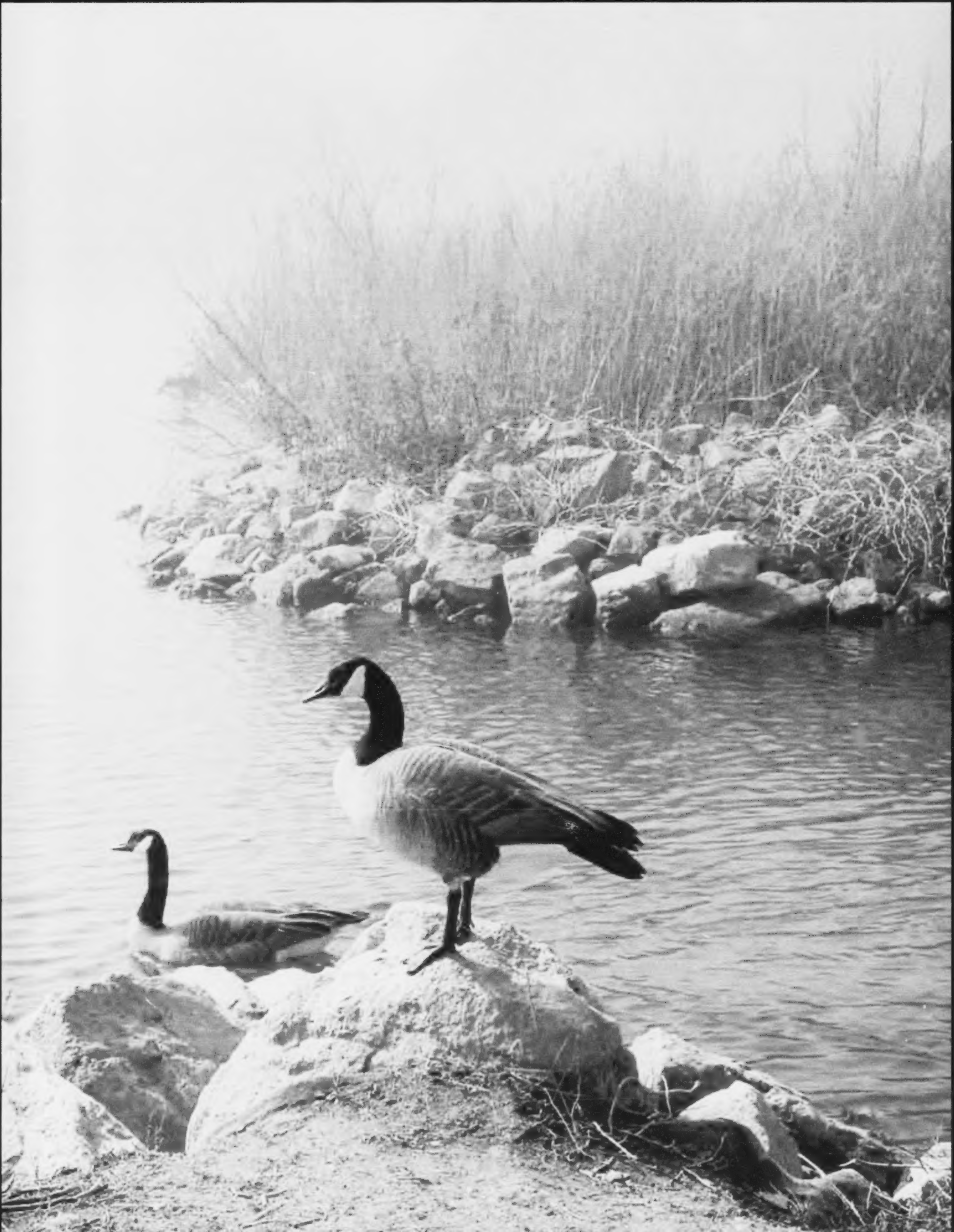
When Lake Erie turned to green soup in the 1960s, Ontario scientists discovered why it was happening and the Ontario government working with the federal government and the U.S.) put in place the laws and infrastructure funding to bring the lake back. In the 1970s, Ontario tackled the gross pollution of heavy industries like pulp and paper where, in some cases, the rivers receiving their effluents were devoid of life for 60 km downstream. Those waterways were brought back to life as well. In the 1980s, Ontario Ministry of the Environment (MOE) scientists showed the world the magnitude and impact that acid rain was having on North American lakes. These findings led to international negotiations with the U.S., culminating in major pollution abatement programs on both sides of the border, which severely curtailed the sulphur dioxide emissions. In the 1990s, the management and harvest of timber was completely re-thought and the Crown Forest Sustainability Act, 1994, *became a world class model for sustainable forestry. In another bold move, 12 per cent of Ontario's industrial forest was permanently set aside in parks and protected areas. And, of course, the 1990s produced the innovative and still internationally unique* Environmental Bill of Rights, 1993, *to empower citizens to become involved in government decision making about the environment.*

The new millennium saw new thinking and new developments as well. A new landscape-level planning approach was created for the Oak Ridges Moraine, which expanded to become the Greenbelt. We saw the introduction of the Climate Change Action Plan to reduce greenhouse gas emissions with its star initiative being the closure of the coal plants. But recently, something has changed.

In this reporting period we saw no bold new legislation to tackle the challenges of our time. The business of government continued on a more modest scale but it could hardly be said to have gone well. This report is full of examples of stumbles and retreats in the implementation of programs and initiatives that were seemingly well conceived and used to work acceptably. In Part 1 of this Report, previously tabled, I documented the failures of various ministries to meet their statutory process obligations under the Environmental Bill of Rights, 1993. *And, here in Part 2, I report to the Legislature on the strange changes to the Ontario Wildlife Damage Compensation Program, which seems to anticipate the farming of our wild birds and animals. I am at a loss to explain the reasoning behind the "bait & switch" approach used when the Ministry of Natural Resources (MNR) posted a proposal on the Environmental Registry to give farmers relief from restrictions on haying related to Eastern Meadowlark, and then issued a decision that gave residential developers a broad exemption from restrictions in the* Endangered Species Act, 2007 *relating to both the meadowlark and the bobolink. Neither do I understand how MNR can completely fail to implement something as critical as the Provincial Wildlife Population Monitoring Program. And, similarly, I question how MOE can confirm that people are being adversely affected by industrial dust emissions and then allow the problem to persist for years.*

It seems there are an increasing number of bumbles and foibles in our efforts to manage our natural environment. We are no longer a jurisdiction that the world looks up to. We still have some credible capacity within our public service, but in terms of achievement compared with other jurisdictions we are, at best, running with the pack. We are losing our touch.

With the formidable challenges of climate change and biodiversity loss facing us, it is not a good time to let this capacity wither, and we don't have to. Maintaining the capability to properly engage environmental and natural resource responsibilities is not expensive. It is really a matter of the people of Ontario expressing their expectations to government on how they want Ontario's wealth of natural heritage maintained for present and future generations.



CHAPTER 1.0

THE *ENVIRONMENTAL BILL OF RIGHTS, 1993*

The *Environmental Bill of Rights, 1993* (*EBR*) gives the people of Ontario the right to participate in government decisions that affect the environment. The *EBR* helps make prescribed ministries accountable for their decisions, and ensures that these decisions are made in accordance with Ontarians' common goal — to protect, conserve, and restore the natural environment for present and future generations. The provincial government is primarily responsible for achieving this goal; however, the *EBR* provides the people of Ontario with tools to ensure this goal is met in a timely, effective, open and fair manner.

The *EBR* gives Ontarians the right to:

- comment on environmentally significant ministry proposals;
- ask a ministry to review a policy, act, regulation or instrument;
- ask a ministry to investigate alleged harm to the environment;
- appeal certain ministry decisions; and
- take court action to prevent environmental harm.

Statements of Environmental Values

Each ministry subject to the *EBR* has a Statement of Environmental Values (SEV). The SEV guides the minister and ministry staff when making decisions that might affect the environment. Each SEV should explain how the ministry will consider the environment when it makes an environmentally significant decision, and how environmental values will be integrated with social, economic and scientific considerations. The principles outlined in a ministry's SEV are specific to the work of that particular ministry.

The Environmental Commissioner and the ECO Annual Report

The Environmental Commissioner of Ontario (ECO) is an independent officer of the Legislative Assembly and is appointed for a five-year term. Under the *EBR*, the Commissioner reports annually to the Legislative Assembly — not to the governing party or to provincial ministries. Each year, the Environmental Commissioner reviews and reports on the government's compliance with the *EBR*. The ECO and staff carefully review how ministers exercised their discretion and carried out their responsibilities during the year in relation to the *EBR*, and whether ministry staff complied with the procedural and technical requirements of the Act. The actions and decisions of provincial ministers are also monitored to see whether they are consistent with the ministries' SEVs.

This year, the ECO's Annual Report is divided into two parts. Part 1 focused on the technical compliance of prescribed ministries with the procedural requirements of the *EBR*, such as adherence to the legislative timelines, use of the Environmental Registry, and the provision of notice and consultation on environmentally significant decisions. Part 2, this report, focuses on the substantive compliance of prescribed ministries with the purposes of the *EBR* and their individual SEVs; this Part includes reviews of ministry decisions, ministry responses to applications for review and investigation, and other significant environmental issues.

A Supplement to this report provides further detail on *EBR* activity during this reporting period.

Ministries Prescribed Under the *EBR*

- Ministry of Agriculture, Food and Rural Affairs (OMAFRA)
- Ministry of Consumer Services (MCS)
- Ministry of Economic Development and Innovation (MEDI)
- Ministry of Education (EDU)
- Ministry of Energy (ENG)
- Ministry of the Environment (MOE)
- Ministry of Government Services (MGS)
- Ministry of Health and Long-Term Care (MOHLTC)
- Ministry of Labour (MOL)
- Ministry of Municipal Affairs and Housing (MMAH)
- Ministry of Natural Resources (MNR)
- Ministry of Northern Development and Mines (MNDM)
- Ministry of Tourism, Culture and Sport (MTCS)
- Ministry of Transportation (MTO)

Applications for Review and Investigation

If an Ontario resident is concerned that an aspect of the environment is not sufficiently protected, the *EBR* grants them the right to file an application for review requesting that prescribed government ministries review: an existing policy, law, regulation or instrument (such as an environmental compliance approval or a Permit to Take Water); or the need for a new law, regulation or policy. The following nine ministries are prescribed under the *EBR* to respond to applications for review:

- Ministry of Agriculture, Food and Rural Affairs;
- Ministry of Consumer Services;
- Ministry of Energy;
- Ministry of the Environment;
- Ministry of Health and Long-Term Care;
- Ministry of Municipal Affairs and Housing;
- Ministry of Natural Resources;

- Ministry of Northern Development and Mines; and
- Ministry of Transportation.

Ontario residents also have the right to file an application for investigation requesting that prescribed ministries investigate their concerns that specific environmental laws, regulations or instruments have been contravened. Applications for investigation may be filed for alleged contraventions under 18 different laws prescribed under the *EBR*, along with any regulations under those laws. Applications for investigation may also be filed for alleged contraventions of prescribed instruments issued under 18 laws, administered by four ministries (MOE, MMAH, MNR, MNDM) and one authority (the Technical Standards and Safety Authority of MCS).

In the 2011/2012 reporting year, the ECO reviewed 19 applications for review, and 5 applications for investigation. The ECO highlights several of these applications in this report, including: a review of the legality of coyote/wolf killing contests (Chapter 2.3); a review of forest management policies in Algonquin Park to protect brook trout (Chapter 2.7); a review of the Oak Ridges Moraine Conservation Plan (Chapter 3.3); a review of a sewage lagoon permit (Chapter 4.4); and an investigation of a cement manufacturing facility (Chapter 5.3). Detailed reviews of all applications completed in 2011/2012 can be found in Sections 2 and 3 of the Supplement to this Annual Report.

Please see the ECO's website (www.eco.on.ca) for an up-to-date list of ministries, laws and instruments prescribed under the *EBR*.

The Environmental Registry

The Environmental Registry is the primary mechanism for members of the public to exercise their participation rights under the *EBR*. The Registry is an online database where prescribed ministries are required to post notices of environmentally significant proposals, and to provide the public with a minimum of 30 days to comment on such proposals. Ministries must consider the public's comments when they make their final decisions and explain in a decision notice how the comments affected their decisions. Each prescribed ministry must also post a copy of its SEV on the Registry.

The Environmental Registry can be accessed at: www.ebr.gov.on.ca.

1.1 | The Environmental Commissioner's Recognition Award

Each year, the Environmental Commissioner of Ontario (ECO) invites ministries to submit programs and projects for special recognition. The ECO's Recognition Award acknowledges those ministries that best meet the goals of the *Environmental Bill of Rights, 1993* (*EBR*) or use the best internal *EBR* practices. This year, seven ministries responded to our call for nominations, submitting a total of 26 projects for consideration. An arm's-length panel reviewed the submissions.

This year's ECO Recognition Award is being presented to staff of the Ministry of Natural Resources (MNR) for their waste management system for park visitors in Algonquin Provincial Park. The system facilitates recycling and organic diversion through the placement of separated waste collection containers along the Highway 60 corridor of the park. These containers are specially designed with wildlife resistant lids and are placed 2/3 underground so the coolness of the ground tempers odours.

As Ontario's flagship provincial park, most visitors would expect that waste management in

Algonquin would be treated with the utmost environmental sensitivity. However, with a turnover of hundreds of thousands of visitors every year, MNR faces a challenge in educating visitors and managing large quantities of waste. Innovative individuals rose to this challenge by implementing the new system, which has increased the waste diversion rate in Algonquin from about 20 per cent in 2004 to over 40 per cent in 2011. This amounted to over 200 metric tonnes of waste diverted from landfill last year. The staff's next goal is to reach a 60 per cent diversion rate.

The ECO applauds this project for its environmental benefits including: increasing recycling and organic diversion, which prevents waste from entering landfills; and educating visitors and staff about responsible waste management. The ECO believes this project is important as it will lessen the environmental impact of the almost one million visits that Algonquin receives annually. Further, if applied across Ontario's protected area system, improved waste management could help educate park users and lessen the impact of the more than 10 million visits that these special places receive each year.

Recipients of the ECO's Recognition Award	
2012	Algonquin Provincial Park's Waste Management System (MNR)
2011	Bioretention Cells and Rubber Modified Asphalt at the QEW Ontario Street Carpool Lot, Beamsville (MTO)
2010	Green Power for the Summer Beaver Airport (MTO)
2009	Project Green (MOE)
2008	Zero Waste Events at the Metro Toronto Convention Centre (MTC)
2007	no submissions found to be acceptable
2006	Southern Ontario Land Resource Information System (MNR)
2005	Conservation of Alfred Bog (MNR, MOE, MMAH)
2004	Environmental Monitoring (MOE)
2003	Ontario's Living Legacy (MNR)
2002	Oak Ridges Moraine Strategy (MMAH)
2001	Eastern Massasauga Rattlesnake Project for Highway 69 Reconstruction (MTO)
2000	Septic System Program (MMAH)

1.2 | Education and Outreach

The Environmental Commissioner of Ontario reaches out to the Ontario public in a number of ways. Our website, www.eco.on.ca, the main source of information about the *Environmental Bill of Rights, 1993* and the activities of the ECO, also provides a searchable function allowing visitors to access thousands of articles on a variety of topics published online by our office. The public can also follow the ECO through Twitter, the ECO blog, Facebook, and YouTube.

Every year the Public Information and Outreach Officer at the ECO receives over a thousand queries on a variety of environmental concerns, and answers questions from members of the public who are interested in exercising their rights under the *EBR*. In fact, during the 2011 calendar year, close to 1,100 enquiries were handled. As the mandate of the ECO now includes reporting on the province's progress in reducing greenhouse gas emissions, as well as energy conservation activities within Ontario, the number of individuals with enquiries continues to rise.

The ECO also manages an active outreach program. For example, the ECO staffs an exhibit with a technologically-advanced interactive information centre at many conferences, symposia and other events. The ECO also regularly shares information about the *EBR* with new audiences, and gives targeted presentations at various conferences throughout the year. The Outreach Officer at the ECO is available during regular business hours, on a limited basis, to make presentations on environmental rights under the *EBR* to groups or classes who wish to learn more. For more information, contact us at commissioner@eco.on.ca.

1.3 | The Environmental Commissioner's Annual Site Visit

Throughout the year, the Environmental Commissioner makes many presentations, speeches and appearances across the province. In addition, Commissioner Miller tours a different part of Ontario for a few days each summer to learn about the environmental issues, challenges and successes unique to that particular region. These site visits give him an opportunity to meet with government staff, industry representatives, environmental organizations and the public. He also gets to see — firsthand and on the ground — the results of local research, conservation and environmental initiatives. These trips provide the office of the ECO with a broader and more informed perspective when reporting on issues in our annual reports. Past site visits have included tours of: the electric power generating facility in Thunder Bay; conservation lands on Pelee Island; a Niagara Falls landfill that converts landfill gas to energy and last year, Algonquin Provincial Park.

On this year's site visit, Commissioner Miller visited Kingston. Highlights of the Environmental Commissioner's May 2012 trip to Kingston include:

- Touring the Ravensview Wastewater Treatment Plant (which was upgraded in 2009 to increase capacity and provide advanced secondary biological treatment), including the plant's state-of-the-art biological aerated filters;
- Helping unveil the plaque celebrating the new LEED certification (Leadership in Energy and Environmental Design) at the Ravensview plant's administrative offices;
- Touring Belle Park Landfill Site, a former City of Kingston waste disposal site now converted for recreational use (including a golf course), and learning about the ongoing remediation efforts such as trees planted for passive leachate control;
- Visiting the Wolfe Island Wind Farm, which consists of 86 2.3 MW wind turbines, and hearing about the construction and first years of operation at the site; and
- Meeting with staff from the Cataraqui Region Conservation Authority at Little Cataraqui Creek Conservation Area to hear about their work across the region.

Commissioner Miller sincerely thanks everyone he visited for taking the time to share their experiences and knowledge of environmental initiatives in Kingston.

CHAPTER 2.0

ISSUES IN ECOSYSTEMS

This year the ECO examines a number of issues related to biodiversity in Ontario, ranging from recreational fisheries, to the marine mammals on the province's northern coast, to the role of fire in restoring ecological health of protected areas, to the use of pesticides in Ontario farms. In some cases, failures in monitoring and implementing planned policies may be limiting Ontario's ability, and capacity, to anticipate and plan for major shifts in Ontario's ecosystems.

Forest management is a key responsibility of the Ministry of Natural Resources. Ontarians have the right to know how forestry activities are affecting wildlife populations across Ontario's publicly owned forests, but the ministry has minimal information to report from the last 17 years of its mandatory wildlife monitoring program. Also, an *EBR* application submitted by the public raised concerns about how forestry is undertaken in Algonquin Provincial Park, especially in light of the park's sensitive brook trout lakes.

In southern Ontario, agricultural operations and wildlife habitat overlap — sometimes to the benefit, and sometimes to the detriment, of wild species. In this Chapter, the ECO examines the three-year exemption for agricultural operations from *Endangered Species Act, 2007* (*ESA*) protections for the threatened bobolink; further, the ECO looks at how MNR defines "damage" to species at risk habitat. The ECO also examines the issue of coyote-killing contests in Ontario, as raised by an *EBR* application.

2.1 | Ecosystem Restructuring

Ecosystems are resilient, with a high capacity to bounce back from major alterations. Forests can regenerate after fires, wetlands can restore themselves following droughts, and contaminated lakes can revive if better pollution controls are adopted. But this environmental resilience has its limits; once the recovery threshold has been exceeded, an ecosystem can rapidly, and perhaps irrevocably, transform to another ecological state.

Ecosystem restructuring — or ecological regime shift — results from external pressures on an ecosystem that substantially and irreversibly alter the structure and function of that system.

These pressures can be chronic and cumulative, such as nutrient loadings or the slow accumulation of toxic substances, or they can be abrupt and catastrophic, like the introduction of an invasive species.

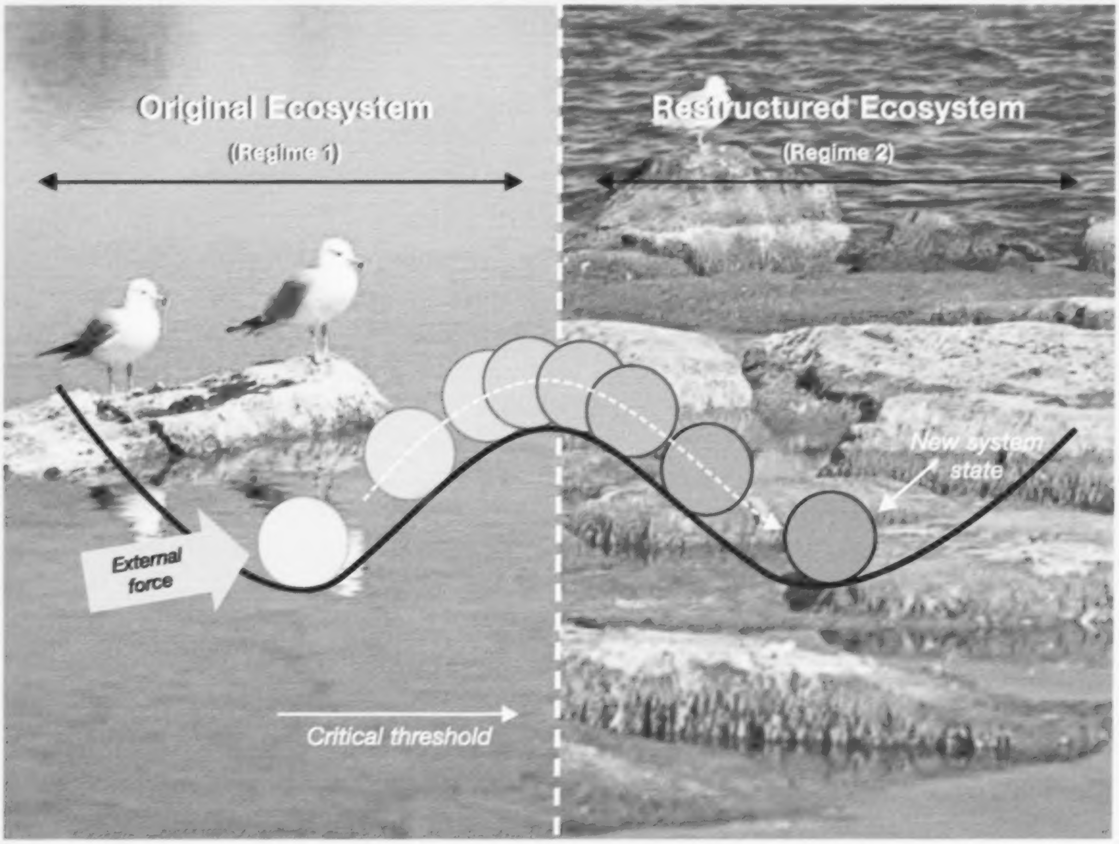


Figure 2.1.1.
Ecosystem restructuring (i.e., regime shifts) can be metaphorically represented by a ball-and-cup diagram. In this diagram, the ball represents the current state of the ecosystem and the valleys (or cups) represent different regimes or fundamental ways in which the ecosystem can function and be structured. External forces (e.g., pollution, fishing, the introduction of non-native species) may act on the system state such that it fluctuates within the regime (valley). However, if the system experiences a large shock (e.g., devastating fire) or persistent directional change (e.g., accumulation of pollutants), a critical threshold may be passed whereby a different set of feedbacks becomes dominant, and the ecosystem (ball) is pushed into a new regime (valley). This large, often abrupt change in structure and function is known as ecosystem restructuring or a regime shift.

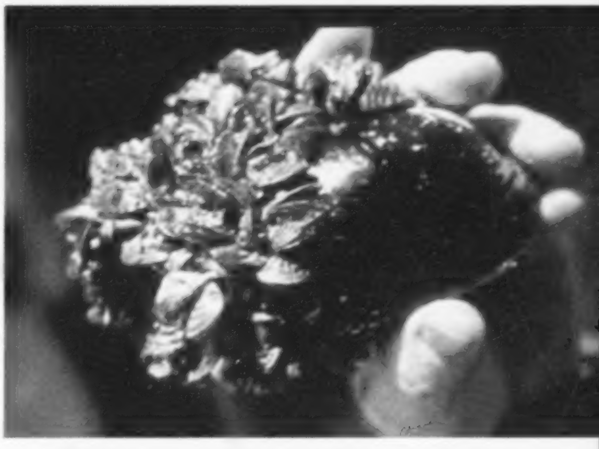
Ecosystem restructuring can occur naturally: for example, when a beaver dam blocks a stream, floods an area and creates a wetland. However, human activities also can trigger ecosystem change. The introduction of a new species, the over-exploitation of wildlife, or the destruction of significant habitats can all contribute to the restructuring of ecosystems. Even with adequate monitoring, it can be difficult to recognize an impending shift, particularly when the drivers of change are slow, subtle and cumulative, progressing toward an irreversible tipping point.

In this Chapter, the ECO highlights examples of current and potential ecosystem restructuring in Ontario, drawing attention to the need to anticipate the unintended consequences of human-mediated change.

Ecosystem Restructuring in Play in Ontario

The Great Lakes

Ecosystem restructuring as a result of human interference is occurring on the shores of the Great Lakes. Zebra and quagga mussels — accidentally introduced to Ontario waters in the 1980s — have substantially reduced phytoplankton concentrations, improving water clarity and, therefore, increasing light penetration. This change has allowed nuisance green algae (which, unfortunately, the mussels do not eat) to expand its depth and distribution, subsequently spoiling beaches, impairing drinking water quality, clogging water intake screens, and raising fears of avian botulism and pathogens.



At the same time, these invasive mussels trap and recycle phosphorus (and other nutrients) in the nearshore in a process termed the "nearshore shunt" (see page 13 of the ECO's 2010/2011 Annual Report). This trapping of nutrients has triggered a fundamental change in some Great Lakes ecosystems, increasing nutrient levels in the nearshore and causing the desertification of the offshore, affecting oxygen levels and wildlife.

Since the arrival of these mussels in the Great Lakes, populations of *Diporeia* have declined drastically, with serious potential consequences for Great Lakes food webs. *Diporeia* is an aquatic shrimp-like invertebrate that is an important food source for whitefish, as well as the preyfish (such as alewife and smelt) on which salmon and walleye rely.

Precambrian Shield

Lakes in Ontario's Precambrian Shield are inherently vulnerable; relatively small perturbations, such as increases in phosphorus levels or the introduction of an invasive species, can have major impacts on aquatic systems on the Shield. Even lakes in protected areas are not immune to human-induced ecosystem restructuring. Researchers in Algonquin Provincial Park are concerned about the potential for ecosystem restructuring posed by some fish species (e.g., rainbow smelt and northern pike), which are perilously close to invading the park's sensitive lakes.

Rainbow smelt (*Osmerus mordax*) are not native to most Ontario waters and can be particularly invasive, as the species thrives in a large variety of habitats and is limited by few environmental factors. With a broad, generalist diet, smelt can act as prey, predator and competitor and have wide-ranging impacts on aquatic communities. Rainbow smelt introduced into some U.S. lakes have caused the extirpation of a cisco species due to predation, and decreased populations of yellow perch due to competition.

A primary vector for the rainbow smelt's unauthorized introduction into Algonquin Provincial Park and other inland lakes in Ontario is anglers' use of the species as baitfish. Rainbow smelt were first found in Algonquin's Manitou and North Tea lakes in the northwest corner of the park

in the 1980s. More recently, a large smelt population — comprised of millions of individuals — was found in Golden Lake, just outside the park's border. Researchers note there are hardly any other fish species left in the lake and the food web has been "irreparably altered." If smelt from Golden Lake were to spread to other lakes in the park, there could be widespread ecological implications — potentially a restructuring of Algonquin's lakes.

Algonquin's aquatic ecosystems could also be restructured by the continued spread of the northern pike (*Esox lucius*). Although pike occur throughout Canada and are one of the most widely distributed freshwater fishes in the northern hemisphere, they are native to only two Algonquin lakes. Since their illegal introduction into Algonquin's Opeongo River in the early 1980s, researchers have reported declines in several aquatic species.

Currently, a single dam is keeping northern pike out of Opeongo Lake, Algonquin's biggest and most famous trout lake. Since pike prey on brook and lake trout, scientists consider pike a serious threat to the trout populations of Algonquin Provincial Park. In addition, if northern pike are introduced into the Algonquin river system, they could outcompete and cause the disappearance of the closely related muskellunge from the park entirely. Pike invasion would not only restructure Algonquin's large fish communities, but would also cause declines or extirpations of small shore fishes, such as minnow species.

Ecosystem Restructuring on the Horizon?

The dramatic impacts of human-induced regime shifts underscore the importance of being alert to ecosystems vulnerable to this phenomenon.

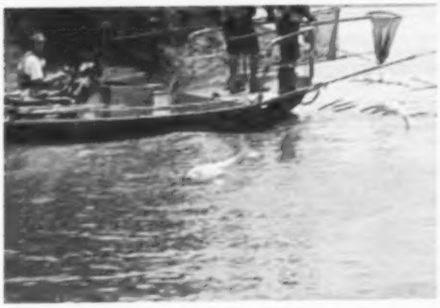
Tree Loss

One case to watch closely is tree loss in southern Ontario forests. Trees are a dominant component of many of Ontario's ecosystems; they provide oxygen, food, shelter and habitat for a variety of animals, and some tree species are essential to the health of soils and watersheds. Distressingly, over the past century, southern Ontario woodlands have been hammered by a succession of extensive impacts, including:

- fungal diseases, which have caused the devastating loss of important tree species (e.g., the American chestnut and American elm);
- fragmentation due to development; and
- periodic outbreaks of native insects (i.e., spruce and jack pine budworms).

Today, new threats loom in the form of invasive beetles. Alarmingly, substantial research and control efforts have been unable to stop the spread of the emerald ash borer (*Agrilus planipennis*), a green beetle native to Asia that is capable of killing healthy ash trees of all sizes. Spread through the transportation of infested nursery stock and firewood, the emerald ash borer continues to infest and kill ash trees in new areas of Ontario, causing extensive tree mortality across the entire range of ash.

The depredations of the Asian long-horned beetle (*Anoplophora glabripennis*) also may significantly alter Ontario's forests. This wood-boring insect, which appears to have been introduced numerous times to North America, affects healthy hardwood trees, such as maple, birch, elm, poplar and willow. While it is difficult to predict the long-term effects that widespread tree loss might have on Ontario's forests, given the ecological importance of trees, it is very possible that the reorganization of some forest ecosystems is on the horizon.



Invasion of Asian Carp

Another potential ecosystem restructuring hinges on the looming introduction of Asian carp species to the Great Lakes. Rapidly dispersing up the Mississippi River basin to Ontario and often confiscated at the Canada-U.S. border, Asian carp represent perhaps the gravest invasive species threat to the Great Lakes. Asian carp are well-suited to the Great Lakes environment; if these voracious filter feeders become established, they could have significant impacts on habitat and food webs and alter aquatic ecosystems by inducing changes in plant, invertebrate and fish communities.

Loss of Keystone Species

The removal of keystone species can also restructure ecosystems. The impacts of removing a top predator (e.g., wolves, bears, cougars) from a food chain can cascade through ecosystems to dramatic effect. For example, reducing the number of wolves in an area can result in an explosion in deer populations, in turn leading to increased browsing on saplings, shrubs and other understory flora, and altering the appearance and ecology of forest vegetation. As a result, the absence of predators in some Ontario ecosystems can affect the regulation of prey populations and food webs (for more information, see Part 8.2 of the ECO's 2007/2008 Annual Report).

Just as predators play an important ecosystem-regulating role, other species are integral to ecosystem functioning, and their removal can have major impacts. For example, the recent declines in bees and other pollinators are alarming due to the unknown consequences of their loss.

Climate Change

Not surprisingly, climate change is expected to affect species' populations, geographic distributions and predator-prey dynamics (see Part 3.1 of the ECO's 2009/2010 Annual Report), which could cause ecological regime shifts. For example, research by the Ministry of Natural Resources (MNR) has suggested that warm-water fishes will dominate Ontario's aquatic systems due to increased water temperatures. Conversely, cold-water stream fishes are expected to decline and potentially disappear by 2055. The loss of sea ice in northern Ontario due to climate change will likely affect prey distribution, reduce the availability of feeding/mating platforms for polar bears and seals, and increase killer whales' access to Hudson Bay, affecting predator-prey interactions and altering the ecosystem's structure (see Chapter 2.9 of this Part of this Annual Report).

Considering Ecosystem Restructuring

Anticipating and preventing ecosystem restructuring requires an approach that focuses on the whole system rather than individual species or places. Such an ecosystem approach also requires recognizing the degree of stress that a system can accommodate before being irreversibly degraded. Unfortunately, as pointed out in a 2008 Natural Resources Canada report, "of the hundreds of environmental laws, regulations, and programs across Canada, extremely few deal with system threats. Nor are they designed to be used in any coherent fashion with each other to counter such threats."

Because MNR's Statement of Environmental Values and strategic direction (Our Sustainable Future) include the ecosystem approach as a guiding principle, one would expect this approach to be widely reflected in ministry decision making. Laudably, MNR has begun to expand its previous species- or site-specific direction to a more holistic, ecosystem-based one. For example, the ministry's policies for managing cervids (see the ECO's 2009/2010 Annual Report) and recreational fisheries (see Chapter 2.8 of Part 2 of this Annual Report) consider multiple species within a defined ecological zone.

However, an ecosystem approach is more than that; it must incorporate analysis, decision making and action on a system-wide scale to predict and address major regime shifts. In many cases, once a regime shift has occurred it cannot be reversed by management intervention; therefore, implementing an ecosystem approach must include the monitoring of indicators to detect any impending restructuring. The ECO has been a longstanding advocate for ecological monitoring. The potential for ecosystem restructuring only reinforces this imperative.

For ministry comments, please see Appendix C.

2.2 | When Agriculture and Wildlife Clash: The Ontario Wildlife Damage Compensation Program

Generally, agricultural operations are compatible with many types of wild species and habitats. However, wildlife damage to livestock and crops can be a concern for Ontario farmers. Some typical wildlife-related problems for Ontario farmers include:

- predation on livestock by coyotes;
- crop damage by birds, insects, deer and other mammals;
- contamination of grain storages by bird droppings; and
- risk of disease transmission to livestock from wildlife.

Many prevention techniques can be used to reduce agriculture and wildlife conflicts, including fences and barriers, scare techniques, repellents, use of guardian dogs or other protector species, removal of food sources, and hunting.

Photo credit: MNR

In some cases, farmers can receive compensation from the Ministry of Agriculture, Food and Rural Affairs (OMAFRA) for losses due to wildlife predators. OMAFRA oversees the Ontario Wildlife Damage Compensation Program (the "Compensation Program"), which covers damages to livestock, poultry, honey bee colonies or beehive-related equipment due to wildlife. In 2010/2011, the total value of compensation claims paid by OMAFRA for injured or killed livestock or damaged bee colonies due to wild predators was $1.56 million. The Compensation Program was updated and expanded in 2011.

Ontario Wildlife Damage Compensation Program

OMAFRA's new Compensation Program Guidelines, effective April 1, 2012, set out the process for claiming compensation for wildlife damage. Eligible farmers must contact their local municipality after discovering injury or death to livestock or poultry believed to be due to wildlife; an appointed "valuer" will investigate and prepare a report for the municipality. Municipalities are responsible for paying applicants' claims in accordance with Compensation Program Guidelines. OMAFRA then reimburses the municipalities for eligible claims, plus an additional $30 per claim for the municipality's administrative costs. For bees or beehive-related equipment, or in areas without municipal organization, OMAFRA pays claims directly to the applicants. Funds are provided under a cost-share program with the federal government. The Compensation Program Guidelines designate eligible livestock and poultry species, as well as wildlife species. The Guidelines also specify maximum compensation amounts for each livestock and poultry species, as well as for bee colonies and beehive-related equipment. The program will pay 100 per cent of the assessed value of the livestock, poultry, bee colonies or beehive-related equipment up to these maximum values.

IMPLICATIONS OF THE DECISION

Lists of eligible farmed species and wildlife species have been updated and expanded under the Compensation Program (see Table 2.2.1). Under OMAFRA's previous compensation system — mandated under the *Livestock, Poultry and Honey Bee Protection Act* (prior to the Act being revised and renamed in 2011) — claims could be paid for damage to cattle, fur-bearing animals, goats, horses, poultry, rabbits, sheep, swine, bees, and beehive-related equipment. The program now also includes some non-traditional farmed species, such as alpaca, llama, ostrich and emu (see Table 2.2.1).

The list of predatory wildlife species has been greatly expanded from the previous program, which only provided compensation for agricultural damage caused by dogs, coyotes, wolves or bears. The new predator list includes 15 more species, including hawks, racoons and even cougars (see Table 2.2.1). It should be emphasized that the new wildlife list only expands the grounds on which producers may file successful compensation claims; it does not expand the legal rights of farmers or landowners to kill these wildlife species.

The new Compensation Program Guidelines now explicitly list the fur farm species eligible for compensation, rather than simply stating "fur bearing animals"; the expanded list includes mink, fox, raccoon, fisher, marten and lynx. These species are consistent with those included as farmed species under the *Fish and Wildlife Conservation Act, 1997* (*FWCA*). The new Guidelines also explicitly list some game birds (as per Schedule 3 of the *FWCA*) as poultry, including some native species: northern bobwhite, ruffed grouse, spruce grouse, sharp-tailed grouse, rock ptarmigan and willow ptarmigan. However, other than mink and fox, it is unclear to what extent any of these wild species are actually farmed for fur or meat in Ontario.

There are a number of concerns associated with the practice of farming species within their native range, including: the potential for the introduction and transfer of disease or parasites to wild populations; genetic concerns if domesticated or captive-bred individuals interbreed with wild individuals; and an increased potential for poaching or other illegal activities (abetted by the legal market for the species). The explicit inclusion of these species on the compensation list may give the impression that the farm rearing of these wild species is accepted or encouraged.

The updated Compensation Program increases the maximum amounts provided to farmers to compensate for losses of livestock (including fur farm animals), poultry, or bee colonies to current market value. However, it is unclear from the Compensation Program Guidelines how value was determined for particular species; for example, the maximum compensation payment for a farmed lynx is set at $2,000, a farmed northern bobwhite at $500 and a farmed raccoon at $75.

ECO COMMENT

OMAFRA's Compensation Program is intended to act as a pressure-relief valve in instances when agriculture and wildlife clash. However, the policy raises a number of questions about how the provincial government undertakes wildlife management generally in southern Ontario. Although the Compensation Program itself cannot authorize farming of particular species, the explicit addition of native mammals and birds to the list of livestock and poultry species eligible for compensation is cause for concern.

Table 2.2.1. Species Eligible for Compensation under the Ontario Wildlife Damage Compensation Program (Source: OMAFRA, Ontario Wildlife Damage Compensation Program Guidelines, effective as of April 1, 2012)

FARMED SPECIES (livestock and poultry)		**WILDLIFE SPECIES (predators)**	
Livestock species (including fur farm species)	**Poultry species**	**Causing damage to livestock or poultry**	**Causing damage to beehives, bee colonies and beehive-related equipment**
Cattle *Sheep* *Goat* *Swine* *Horse* *Rabbit* *Bison* *Elk* *Deer* *Alpaca* *Llama* *Ostrich* *Emu* *Rhea* *Donkey* *Mule* *Mink* *Fox* *Raccoon* *Fisher* *Marten* *Lynx*	*Chicken* *Turkey* *Duck* *Goose* *Northern bobwhite* *Ruffed grouse* *Spruce grouse* *Sharp-tailed grouse* *Gray (Hungarian) partridge* *Ring-necked pheasant* *Rock ptarmigan* *Willow ptarmigan* *Wild turkey*	*Coyote* *Wolf* *Bear* *Fox* *Fisher* *Cougar* *Lynx* *Bobcat* *Raven* *Eagle* *Hawk* *Crow* *Turkey vulture* *Weasel* *Raccoon* *Marten* *Mink* *Elk*	*Bear* *Skunk* *Raccoon* *Deer*

OMAFRA's intent may have been to bring the program in sync with other provincial policies. However, simply because a species can, theoretically, be farmed legally in the province does not mean they *are* being farmed or, if so, whether they should be eligible for compensation in the event of wildlife predation. OMAFRA's compensation for native species under the program provides an implicit assumption of the acceptability of – and perhaps an incentive for – farming native animals. Permits issued by the Ministry of Natural Resources that authorize the "farming" of such species are not classified instruments under the *Environmental Bill of Rights, 1993* (*EBR*) and are not subject to public scrutiny. The ECO believes that the farming of any native species in Ontario raises legitimate concerns worthy of public discussion and that these approvals should be classified as instruments under the *EBR*.

OMAFRA should provide a rationale for why it has included particular species and what information was used to allocate species-specific compensation amounts. Without such a rationale, elements of the Compensation System seem exceedingly absurd: for example, the $75 compensation for a "farmed racoon" killed by wildlife, or the $2,000 compensation for a "farmed lynx" killed by wildlife — perhaps by a wild lynx. There should be a clear distinction between domesticated species and native Ontario species in the Compensation Program. It makes little sense, ecologically or economically, for the government to provide compensation for farmed native species killed by their wild native predators.

For a more detailed review of this decision, please refer to Section 1.1 of the Supplement to this Annual Report. For ministry comments, please see Appendix C.

2.3 | MNR's Silence on the Legality of Contests to Kill Coyotes and Wolves

The eastern coyote, found throughout much of southern Ontario and agricultural areas in the north, is a hybrid of the smaller western coyote (*Canis latrans*) and the eastern wolf (*Canis lycaon*). For the past few years, residents of rural eastern Ontario have perceived an increase in the abundance of coyotes. Although coyotes are usually wary of humans and avoid people whenever possible, cases of individual coyotes preying on livestock, as well as rare attacks on people and pets, have escalated the public's hostility towards these animals. In an attempt to control local coyote numbers, organizers have started holding contests that encourage participants to kill coyotes — and in some contests, wolves — for the chance to win guns and other prizes. Eastern wolves are a provincially and federally listed species at risk.

As early as 2010, concerned citizens began voicing concerns that these contests — in addition to being ineffective at reducing coyote numbers — may be illegal under section 11(1) of the *Fish and Wildlife Conservation Act, 1997* (*FWCA*). This section of the Act prohibits, except with the authorization of the Minister of Natural Resources — and subject to certain exceptions — the hunting and trapping of wildlife for gain (or the expectation of gain); the hiring, employing or inducing of another person to hunt or trap for gain; or the payment or acceptance of a bounty.

In March 2011, the then Minister of Natural Resources publicly stated that bounties "aren't an effective form of population control," and she "absolutely" disapproved of two annual coyote contests held in the towns of Osgoode and Arnprior. Nevertheless, much to the frustration of concerned Ontarians, the ministry has not commented on the legality of these contests, nor has it charged any contest organizers or participants to date with an offence under the *FWCA*.

In March 2011, two applicants filed an application under the *Environmental Bill of Rights, 1993* (*EBR*) requesting that the Ministry of Natural Resources (MNR) investigate alleged contraventions of section 11(1) of the *FWCA* by the organizers, hosts and participants of two such contests, one of which was advertised as a coyote/wolf hunt contest. The applicants argued that by sponsoring, advertising, organizing, and providing logistics and other benefits, contest organizers induced individuals to kill coyotes and wolves for gain in the form of prizes, thereby contravening the *FWCA*. Moreover, the applicants contended that by collecting and aggregating contest registration fees, and disbursing prizes to participants, contest organizers paid a *de facto* bounty for each animal killed and presented. The applicants argued that contest participants also violated the *FWCA* by hunting/trapping for the expectation of gain and paying entry fees that contributed to the bounty.

The applicants asserted that the contests are environmentally harmful, as they: are not science-based; fail to target potentially "problem" individuals; and encourage the indiscriminate and unlimited killing of predator species that "play an essential role in maintaining a healthy predator-prey dynamic and a well-functioning ecosystem." Moreover, the applicants pointed out that bounties have been shown to be unsuccessful in eradicating coyotes.

MINISTRY RESPONSE

In April 2011, MNR notified the applicants that the ministry had received the application for investigation on March 28, 2011. Under Part V of the *EBR*, if a ministry denies an application for investigation, it must notify the applicants (and the ECO) of this decision within 60 days of receiving the application. After many months with no response from the ministry, the applicants and the ECO independently sent letters to MNR expressing frustration with the ministry's delay and requesting a decision on the application. On December 7, 2011 — an incredible 192 days after the *EBR*'s 60-day statutory deadline had elapsed — MNR finally sent a Notice of Decision to the applicants indicating that it was denying the application and would not be conducting an investigation under the *EBR*.

MNR denied the application on the grounds that the alleged contraventions are not likely to cause harm to the environment and not serious enough to warrant an investigation under the *EBR*. In its brief Notice of Decision, MNR stated that "an investigation under the *EBR* is not necessary in relation to the contraventions alleged in the application as any changes in how coyotes are harvested due to holding and participating in contests would not likely cause harm to the environment." MNR appears to have based this conclusion on the fact that "coyote seasons in most of southern Ontario are open year-round with no limit on the number of

Photo credit: MNR

animals that can be harvested by licensed hunters and trappers" and that "coyote populations have been shown to be resilient to this harvest."

MNR's Notice of Decision did not elaborate on the ministry's rationale for denying the application, nor respond to the applicants' concerns that a contest that encourages the killing of wolves could have ecological impacts on these species. Moreover, while MNR's response stated that conservation officers "will continue to monitor coyote hunting across Ontario to monitor hunters' compliance with applicable laws," the ministry failed to comment on the potential illegality of the contests and whether conservation officers will monitor the contests to ensure compliance with section 11(1) of the *FWCA*.

Seeking clarity around the legality of these contests, in January 2012, the ECO sent a letter asking the Deputy Minister of MNR to: explain whether coyote killing contests are illegal under section 11 of the *FWCA*; and to confirm whether any coyote hunting contests in Ontario were, or will be, authorized by the Minister of Natural Resources. In April 2012, MNR responded to the ECO's letter, reiterating that coyote contests are not likely to harm the environment and are not serious enough to warrant an investigation under the *EBR*. The ministry also indicated that conservation officers have been monitoring hunting activities for compliance with hunting regulations under the *FWCA*. MNR failed to respond, however, to the ECO's specific questions around the legality of these contests under section 11 of the *FWCA*.

For the full text of the ministry's decision, see our website at www.eco.on.ca.

ECO COMMENT

The ECO is extremely disappointed with MNR's handling of this application; the ECO finds it unacceptable that MNR responded to the applicants over six months late with a scant Notice of Decision that failed to adequately address the applicants' concerns or explain why the ministry's response was so overdue.

Despite being required by law to provide a decision by late May 2011, MNR did not inform the applicants of its decision on this locally controversial issue until December 2011, two months after the provincial election. This failure to comply with non-discretionary *EBR* deadlines compromises Ontarians' ability to participate in environmentally significant decision making. Moreover, it undermines the public's confidence in the government and raises doubts over whether it treats Ontarians' environmental rights seriously. In addition, MNR's failure to provide any explanation for its lateness was disrespectful of the applicants, the ECO and the Legislature.

The applicants' motivation for submitting this application was to clarify the legality of coyote/wolf-killing contests, something the applicants and others have requested from MNR for years. Unfortunately, in its Notice of Decision, MNR seems to deliberately avoid clarifying whether these contests were authorized by the Minister or are, in fact, illegal. This continues to leave the applicants and other Ontarians confused and frustrated. Even when asked point-blank by the ECO whether these contests were authorized (or potentially in contravention of section 11 of the *FWCA*), MNR's response blatantly evaded the question. If these contests were *not* given ministerial approval and are illegal under section 11 of the *FWCA*, MNR should say so, before explaining to the public any decision to refrain from taking enforcement actions.

The ECO believes that contests that actively encourage the indiscriminate killing of animals and the manipulation of wildlife populations have the potential to cause environmental harm. In particular, contests that encourage the killing of wolves — and coyotes, which sometimes resemble wolves — could have negative impacts on populations of eastern wolves, a species of special concern. Irrespective of whether the contests actually cause environmental harm, MNR's refusal to clarify whether these contests contravene the *FWCA* gives the impression that the ministry is turning a blind eye. This abdication of authority undermines the public's confidence in MNR's ability to manage Ontario's wildlife. Indeed, if MNR leaves this issue unclear and unresolved, some Ontarians might initiate hunting contests to control the populations of other species they consider a nuisance.

MNR has been tasked by the Ontario legislature, and by extension all Ontarians, with the responsibility to decide the appropriate level of hunting pressure on a species; it is inappropriate for local businesses or hunting clubs to assume this role on their own. The ECO urges MNR to investigate all coyote/wolf-killing contests in Ontario and clearly explain to the public whether they are legal under section 11 of the *FWCA*; if they have not been legally authorized, a reasonable expectation would be that enforcement action would be swiftly undertaken.

RECOMMENDATION 1

The ECO recommends that MNR publicly confirm whether coyote and wolf-killing contests are legal.

For a more detailed review of this application, please refer to Section 3.2.1 of the Supplement to this Annual Report. For ministry comments, please see Appendix C.

2.3.1. MINISTER'S AUTHORITY TO DELEGATE THE POWER TO ISSUE HUNTING LICENCES TO THIRD PARTIES

The 2012 budget bill — Bill 55, the *Strong Action for Ontario Act (Budget Measures), 2012* — made a number of changes to legislation administered by MNR, including the act related to hunting and fishing wildlife, the *Fish and Wildlife Conservation Act, 1997.* Among other things, Bill 55 gives the Minister of Natural Resources the authority to delegate his or her powers — including the power to issue and impose conditions on hunting licences — to a person or body prescribed by regulations. The ECO is concerned that the delegation of such powers may give a third party the ability to decide the timing, location and level of hunting pressure in the province, effectively granting the power to set wildlife management policy in Ontario.

2.4 | "Damage or Destroy": New Guidance on Protecting the Habitat of Ontario's Species at Risk

One of the key protections afforded endangered and threatened species under Ontario's *Endangered Species Act, 2007* (*ESA*) is the prohibition in subsection 10(1) on damaging or destroying their habitat. This protection is essential, as habitat loss and alteration present the most significant threat to species at risk in Ontario. However, for this protection to be effective, it must be clear what is meant by "damage or destroy."

In February 2012, the Ministry of Natural Resources (MNR) released a new policy and guidance document, Categorizing and Protecting Habitat under the Endangered Species Act, (the "Policy"), that sets out the ministry's approach to determining whether a proposed activity is likely to damage or destroy habitat.

Habitat Protection under the *ESA*

Under the *ESA*, habitat for a species is defined as either: "regulated" habitat (i.e., an area described in a habitat regulation); or, if no habitat regulation has been made for that species, "general" habitat, consisting of "an area on which the species depends, directly or indirectly, to carry on its life processes, including life processes such as reproduction, rearing, hibernation, migration or feeding."

The prohibition on damaging or destroying habitat is balanced by the power of the Minister of Natural Resources to issue permits authorizing people to engage in activities that would otherwise be prohibited.

Categorizing and Protecting Habitat under the *ESA*

This new Policy explains MNR's approach to determining whether a proposed activity is likely to damage or destroy habitat. Primarily intended to assist MNR in ascertaining whether a planned activity requires a permit, the Policy will also be used for enforcement purposes.

The Policy sets out guiding principles for determining whether a proposed activity would contravene the habitat protection provision under subsection 10(1) of the *ESA* including, for example:

- considering the purpose of the *ESA*;
- making decisions based on the best scientific information;
- erring on the side of caution in favour of affording greater protection to habitat; and
- making determinations on a case-by-case basis.

The Policy emphasizes that "not all activities that alter habitat will damage or destroy that habitat. **Habitat is *not* a 'no activity zone' for all human activities.**" The Policy defines "damage" to mean altering habitat "in ways that *impair* the function (usefulness) of the habitat for supporting one or more of the species' life processes", while "destroy" means altering habitat "in ways that *eliminate* the function (usefulness) of the habitat."

To determine whether a proposed activity is likely to damage or destroy habitat, the Policy requires consideration of:

- details of the activity (e.g., spatial footprint, location, timing and duration, methodology, indirect effects, potential cumulative effects);
- which parts of the habitat are likely to be altered; and
- how the alteration may affect the species' ability to carry out its life processes (e.g., reproduction, hibernation, migration, feeding).

The Policy establishes a framework for categorizing areas of a species' habitat based on the anticipated tolerance of the species to disturbance of those areas. Category 1 (red) includes the most highly sensitive habitat areas, Category 2 (orange) represents moderately sensitive habitat areas and Category 3 (yellow) represents highly tolerant habitat areas (see Table 2.4.1). Almost all activities in Category 1 habitat will require an authorization, while only the highest impact, large scale activities would require authorization to proceed in Category 3 habitat. The categorization of habitat will also inform the stringency of conditions that may be required for an authorization.

Table 2.4.1. Habitat Categorization Based on Anticipated Tolerance to Disturbance
(Adapted from: Categorizing and Protecting Habitat under the Endangered Species Act, MNR, 2012)

	CATEGORY 1	CATEGORY 2	CATEGORY 3
Examples of habitat usage	Breeding, overwintering habitat; localized areas used by large number of individuals relative to population size; areas known to be habitually used	Other areas used by a species to carry out daily activities, such as frequently used foraging areas	Areas used less frequently, such as areas used for travelling to/ from preferred habitat or occasional foraging areas
Tolerance to disturbance	Species have lowest tolerance to habitat alteration	Species have moderate tolerance to habitat alteration	Species have highest tolerance to habitat alteration
Potential impacts	Activities are likely to damage or destroy	Most small-impact activities are not likely to damage or destroy; some larger impact activities are likely to damage and destroy	Almost no small-impact activities are likely to damage or destroy; some larger impact activities are likely to damage and destroy
Authorizations required	Authorization generally required (most stringent conditions)	Authorization required for some larger impact activities	Authorization required for some larger impact activities (least stringent conditions)

The Policy includes a table of factors to be considered when categorizing habitat, including:

- "use of habitat" factors — life process; concentration of individuals; frequency or duration of use; habitual use; and specialized ecological requirements; and
- "characteristics of habitat" factors — availability in the province; limiting influence of habitat; resiliency or restorability of habitat; relationship to Category 1 habitat; number of species at risk; and habitat disturbance thresholds.

The Policy does not prescribe specific categorizations, but provides examples for each factor in which there will be less tolerance for disturbance.

Information Gathering Form

MNR developed an Information Gathering Form for Activities that may affect Species or Habitat protected under the *Endangered Species Act* (the "Information Gathering Form,") in conjunction with the Policy. The Policy requires proponents to complete the 13-page form and submit it to MNR so that the ministry may determine whether the proposed activity is likely to damage or destroy habitat. As its full title suggests, the Information Gathering Form will also be used to identify activities that would contravene the prohibition on harming or harassing species under subsection 9(1) of the *ESA*.

The Information Gathering Form requires information regarding: the proposed activity and its duration; project location and current land uses; any species at risk that may be present at or near the project location; and how species at risk and habitat may be affected by the proposed activity.

IMPLICATIONS OF THE DECISION

MNR reports that it reviews an estimated 4,000 to 5,000 projects per year regarding potential *ESA* authorizations. As of May 3, 2012, the ministry had issued 511 permits since the Act came into force in 2008, many of them for damaging or destroying habitat. This policy provides a new level of transparency to the permitting process under the *ESA*, as it shares with the public MNR's approach to applying the subsection 10(1) prohibition — and making decisions that could potentially put habitat at risk. The Policy should also clarify some misconceptions about *ESA* habitat protection; in particular, by explaining that species at risk habitat is not automatically off-limits to all activities.

However, uncertainty will likely linger. Due to the unavoidably case-by-case nature of each species' habitat needs, it may be difficult to predict how MNR would categorize habitat in any given case — and thus decide whether *ESA* authorization is required. The subjective nature of the approach (i.e., using a sliding scale of more or less tolerance to categorize habitat) may also lead to inconsistent — and potentially damaging — decisions regarding permitting needs.

Basing damage and destroy determinations on functionality or usefulness of habitat (or lack thereof) could be problematic, as it may be challenging in some cases to ascertain habitat functionality or to anticipate the effects of an activity on habitat functionality. The ECO expressed concern about this approach in Part 3.4 of our 2009/2010 Annual Report, regarding proposed MNR technical guidance about forestry and aggregate extraction within the regulated habitats of the peregrine falcon and wood turtle. Using a functionality/usefulness approach, MNR took the position that harvesting that retains residual forest, as well as existing aggregate extraction, were both activities that may not damage or destroy the regulated habitat of those species. While MNR has, in this Policy, provided more details about how habitat functionality is assessed, it remains a subjective process that will need to be exercised with caution.

MNR's effectiveness in determining whether authorization is required will depend largely on the reliability and completeness of information provided by the proponent in the Information Gathering Form. Inaccurate or incomplete information, if not caught, could lead to incorrect determinations by MNR and, consequently, result in the damage or destruction of habitat.

ECO COMMENT

The *ESA*'s success in protecting and recovering species is dependent on MNR's approach to implementing the Act. The significance of this Policy cannot be overstated; decisions about what activities are acceptable — without authorization — in the habitat of species at risk could have long-term and potentially irreversible consequences for the province's most vulnerable species.

The ECO is pleased that MNR has described its process for assessing the impacts of proposed activities on habitat; we have been calling on MNR to explain its approach to implementing aspects of the *ESA* for some time. While some uncertainty remains due to the case-by-case and subjective nature of determinations about impacts on habitat, MNR has at least improved transparency surrounding its approvals process for proponents and other stakeholders.

The ECO believes that the process could be made more predictable if species-specific habitat categorization guidance was provided in the recovery planning process for each species. This approach would enable proponents and ministry staff, in at least some cases, to ascertain with greater certainty the likely impacts of an activity on a particular species' habitat and, thus, the need for *ESA* authorization.

The ECO urges MNR to develop a process for verifying the information provided in Information Gathering Forms. MNR should also strictly adhere to the Policy's guiding principle of exercising caution in the face of uncertainty, and clearly document the information upon which it ultimately bases its decisions (perhaps within the permits themselves) to ensure greater accountability and transparency. Even more importantly, MNR should establish a process for measuring its effectiveness at determining whether an activity will damage or destroy habitat — including the ministry's approach based on habitat functionality — by monitoring the outcomes of activities that are deemed by MNR to not require authorization, as well as those that are determined to require a permit. This follow-up is critical, considering what's at stake.

For a more detailed review of this decision, please refer to Section 1.14 of the Supplement to this Annual Report. For ministry comments, please see Appendix C.

2.5 | Linking Conservation and Agriculture: Finding a Solution for Bobolink

The bobolink (*Dolichonyx oryzivorus*) is a medium-sized migratory songbird that breeds and nests in the hayfields and pastures of Ontario each spring. The species was classified as threatened under the province's *Endangered Species Act, 2007* (*ESA*) on September 28, 2010. The *ESA* prohibits the harming or harassing of threatened and endangered species, as well as the damage or destruction of their habitat.

In June 2011, the Ministry of Natural Resources (MNR) granted agricultural operations a three-year exemption from the *ESA*'s protection provisions for bobolink. In May 2012, the ministry broadened that exemption.

Bobolink and Agriculture in Ontario

The bobolink has one of the longest annual migrations of any songbird, travelling up to 20,000 kilometres round-trip every year. The species nests in Canada and the United States and migrates through Central and South America where it winters. In Canada, bobolink were historically associated with tall-grass prairie habitat, which covered parts of southern Manitoba and Ontario. However, as much of this habitat was lost, bobolink are now dependent on agricultural hayfields and livestock pasture lands for nesting sites. Females construct nests and lay eggs at ground level hidden in tall grasses.

Data show that over the past decade, Ontario's bobolink population has been declining by about 7 per cent per year, resulting in a total decline of 52 per cent between 1998 and 2008; these ongoing and drastic population declines, combined with a shrinking range, have led to the listing of the species as threatened under the *ESA*. Several probable causes of the decline in bobolink populations across its range have been identified:

- incidental mortality from agricultural operations, such as hay harvesting, that destroy nests and kill adults;
- habitat loss caused by the conversion of pasture lands to crop lands, such as soy and corn;
- habitat fragmentation, which promotes higher rates of predation on nests located near pasture edges; and
- pesticide use on both breeding and wintering grounds, which may cause both direct and indirect mortality.

The bobolink breeding period in late June is increasingly overlapping with the hay harvesting season. Modern agricultural techniques favour earlier and more frequent cutting of hay fields. In part due to climate change, hay is now cut approximately two weeks earlier than it was in the 1950s. Some experts suggest that if hay harvest operations are moved even seven to ten days later, nesting success rates increase dramatically and mortality is greatly reduced. However, farmers are reluctant to delay haying time; since this period is when hay is at its highest nutritional value for livestock, there is concern that a failure to hay before the end of June may have downstream impacts on livestock health and the quality of meat and dairy products.

IMPLICATIONS OF THE DECISION

The "transitional exemption" for agricultural operations from the Act's protection provisions will remain in effect until October 31, 2014. Farmers with nesting bobolink on their property will be permitted to undertake normal agricultural operations without any fear of being prosecuted under the *ESA*, as long as the land remains suitable for agriculture.

The original June 2011 exemption would not apply if listed permissible activities were undertaken while converting the land from agriculture for development or other purposes. The original *ESA* exemption only applies to agriculture; all other activities are subject to the regular prohibitions under the Act. Therefore, other land uses that could have potential contact with nesting bobolink – such as aggregate extraction or wind energy – are prohibited from harming or harassing bobolink or damaging or destroying their habitat without necessary permits or agreements.

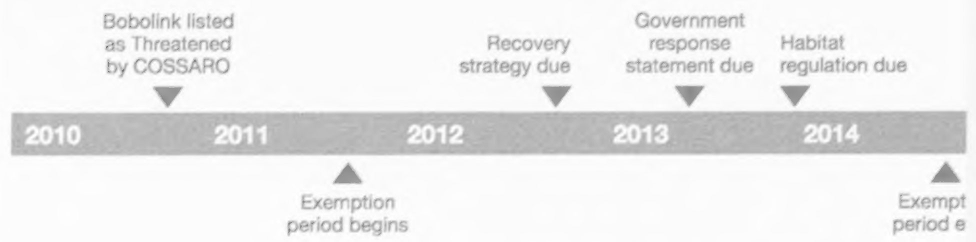


Figure 2.5.1.
Approximate timeline for *Endangered Species Act, 2007* recovery planning and protections for bobolink in Ontario. (COSSARO = Committee on the Status of Species at Risk in Ontario.)

During the exemption period, other *ESA* recovery planning requirements related to bobolink will be undertaken (see Figure 2.5.1). A recovery strategy is required to be prepared for bobolink by September 28, 2012. The government is then required to publish a "government response statement" that summarizes the actions it will take in response to the recovery strategy nine months later on June 28, 2013. A habitat regulation for bobolink is expected by September 28, 2013.

MNR established a multi-stakeholder advisory group to discuss best management practices and possible incentives, as well as to identify research approaches, for protecting bobolink. The working group is intended to provide MNR the opportunity to delve more deeply into socio-economic issues that will not be discussed in the species' recovery strategy.

The ministry stated that it may consider a landscape-scale approach for the protection and recovery of all grassland bird species. Rather than providing for the protection and recovery of bobolink alone, this type of approach could benefit recovery efforts for multiple grassland birds at risk in Ontario, including the eastern meadowlark (*Sturnella magna*), which also nests in agricultural lands, such as hay fields and pastures.

MNR Expands Exemption for Destroying Bobolink Habitat

On May 7, 2012, MNR posted a decision notice on the Environmental Registry (#011-5372) for its amendment of O. Reg. 242/08 (General), made under the *ESA*, respecting eastern meadowlark (*Sturnella magna*). The final regulation was more than a surprising departure from what had initially been proposed — it was a fundamental change in the nature of the proposal.

The decision notice states that the ministry has added a transition period that would allow "residential development activities" to damage or destroy the habitat of eastern meadowlark and/or bobolink. Nowhere in the original proposal notice was it suggested that this exemption would be extended to residential development activities or to bobolink.

The initial reason for the bobolink exemption, and the subsequent eastern meadowlark exemption, was to encourage stewardship of the species' habitat by the agricultural community — since both bird species are dependent on agricultural hayfields and livestock pastures for breeding habitat. The exemption was limited to normal agricultural practices and did not apply for activities undertaken if the land was converted from agriculture to development or other purposes.

However, under the recent amendments to O. Reg. 242/08, bobolink and eastern meadowlark habitat can now be permanently destroyed by residential development activities approved prior to November 1, 2014 — although some level of habitat must be replaced, ranging from 10 to 100 per cent of the habitat damaged or destroyed, depending on the type of development and when it was approved.

ECO COMMENT

The ECO believed that the temporary exemption for agricultural operations from *ESA* provisions protecting bobolink was reasonable. As essential stewards of bobolink habitat in hay fields and pasture lands, farmers need to be active participants if the species is to be recovered. The ECO believed that MNR's commitment to working with both agricultural and conservation groups was a positive step towards a solution that would protect bobolink and conserve their habitat.

However, the significant change to O. Reg. 242/08 regarding the bobolink exemption has made the ECO reconsider our initial praise of MNR's willingness to work with farmers towards a solution for bobolink.

While there is a conservation imperative for the exemption for agricultural activities, there is no ecological rationale for exempting residential development activities from *ESA* prohibitions for destroying bobolink or eastern meadowlark habitat. The development exemption seems to discount the value of farmers' efforts in reaching a long-term solution for grassland bird conservation. Many of the commenters on MNR's original proposal may have had another opinion if they had known that MNR planned to extend the exemption to residential development activities.

The ECO believes that this decision exemplifies a clear perversion of MNR's responsibilities under the *Environmental Bill of Rights, 1993* (*EBR*). Although the *EBR* provides the Minister with the power to determine whether a proposal has been so "fundamentally altered" as to become a new proposal, the ECO believes this discretionary power was used inappropriately in this case and that the ministry misled the public by failing to consult on the substantive content of the exemption. The decision notice in no way reflects what MNR consulted on, as it deals with an additional species at risk and a different industry. MNR was obligated to consult the public on this fundamental change from what was originally proposed, notwithstanding its claim that it made the changes because of public comments received. The ECO believes that this is a case of the ministry actively undermining the *EBR* (for further examples, please see Part 1 of the ECO's 2011/2012 Annual Report).

To avoid the public confusion that occurred in the case of the bobolink, the ECO urges the ministry in the future to better plan and prepare for any significant habitat use conflicts prior to the habitat protection provisions coming into effect. Automatic general habitat protections are scheduled to come into effect for 99 species at risk on June 30, 2013. The ministry should be planning, educating and advertizing in advance of this change to ensure the successful implementation of the *ESA*. A proactive approach may alleviate potential conflicts and concerns.

Finally, the ECO supports the use of an ecosystem approach for grassland bird conservation, as suggested by MNR. The ECO hopes that stewardship agreements and incentive options to complement species recovery will be examined through the bobolink advisory group and in the development of a government response statement.

For a more detailed review of this decision, please refer to Section 1.15 of the Supplement to this Annual Report. For ministry comments, please see Appendix C.

2.6 | "Nothing to Report": The Failure of the Provincial Wildlife Population Monitoring Program

Commercial timber harvesting occurs on over 270,000 square kilometres of Ontario's publicly-owned Crown forests. The Ministry of Natural Resources (MNR) is responsible for ensuring the long-term health of these forests. Part of its responsibility requires an understanding about how forestry activities affect wildlife: healthy and sustainable forest ecosystems include healthy wildlife populations. The Provincial Wildlife Population Monitoring Program (PWPMP) was established under the Class Environmental Assessment for Timber Management on Crown Lands in Ontario ("Timber Class EA") to help MNR fulfil this legal obligation.

The Provincial Wildlife Population Monitoring Program

In 1994, after over four long years of public hearings, the Environmental Assessment Board (now the Environmental Review Tribunal) approved MNR's Timber Class EA. The EA Board set several legally-binding terms and conditions of approval related to monitoring, including assessing the effects of timber management practices on protecting non-timber values such as wildlife.

Condition 81 of the Timber Class EA Approval established the requirement for MNR to develop and implement a monitoring program (the PWPMP) within the Area of the Undertaking of commercial timber harvesting (AOU) in order to monitor population trends of representative terrestrial vertebrate species. The intended purpose of the PWPMP was to understand those environmental effects of forestry activity on non-timber values that can only be detected at the provincial level — that is, to understand how forest management activities were affecting terrestrial wildlife species at a provincial, rather than local, scale. The Timber Class EA was approved for a fixed nine-year term to provide an opportunity for on-the-ground testing of the direction provided; the EA Board expected that "results of monitoring will prove if MNR is protecting non-timber values." In 2003, MNR would need to seek re-approval from the Ministry of the Environment (MOE) for its Timber Class EA.

By the end of the initial Timber Class EA approval period, the ministry stated it was unable to monitor all the species it had planned for and admitted that the wildlife population monitoring framework had not been fully implemented as it had been originally designed. In its required 2002 Timber Class EA Review, the ministry outlined the challenges it had faced, including the difficulty in designing surveys for some species groups. However, MNR reaffirmed the importance of the wildlife monitoring program, noting the continuing need to monitor wildlife populations and to conduct research on the effects of forest management on wildlife habitat and wildlife populations.

In 2003, MOE approved an extension to MNR's Timber Class EA, now known as Declaration Order MNR-71. Rather than having a fixed term like the previous Class EA approval, the Declaration Order does not have an expiration date and does not require MNR to seek periodic re-approval from MOE. By removing this re-approval requirement, MOE reduced its oversight role and distanced itself from monitoring MNR's compliance with its responsibilities initially approved through the Timber Class EA. At the time, this withdrawal by MOE raised concern, as a judicial review had recently found MNR in violation of some conditions in the Timber Class EA. Condition 30 of the 2003 Declaration Order reaffirmed the requirement for the PWPMP. The condition required that a Program Plan be prepared that outlined priorities, representative species to be monitored, and proposed activities and schedules for the program. MNR stated that MOE's reason for requiring a Program Plan was to add transparency, clarity and accountability to the PWPMP. In 2004, MNR finalized its first Program Plan (version 1.0) as required by the Declaration Order.

In 2010, MNR updated its Program Plan. The purpose of the plan is to describe the PWPMP and outline its priorities, representative species to be monitored, and proposed activities and schedules. MNR failed to post the Program Plan on the Environmental Registry for public comment, as required under the *Environmental Bill of Rights, 1993* (for more information, see page 139 of the ECO's 2010/2011 Annual Report and Chapter 2.3 of Part 1 of the ECO's 2011/2012 Annual Report).

Funding Concerns

An effective monitoring program requires: an adequate long-term sampling strategy to obtain statistically valid results; analysis and assessment of the information collected; and reporting to inform both policy and research direction, as well as to inform the public that the system is functioning as promised. In the initial development of the program in the early 1990s, MNR scientists suggested that an adequate budget for the PWPMP would be $6.4 million (1991 dollars), including $500,000 for transfer payments (to volunteer programs, bird migration monitoring programs and special projects). By contrast, the program's entire budget in 2007 was $543,000: for staffing, travel, infrastructure, partnership support, development and evaluation of sampling methodology and field operations. Adjusted to 2007 dollars, the PWPMP was receiving in 2007 only 6.3 per cent of the funding that had been initially recommended for the program. As far back as 1997, the ministry noted that the fiscal climate had not permitted staffing to the levels originally intended for its wildlife assessment units. Further, in 2008, MNR reported that "no field work was conducted during the summer of 2006 due to reduced budgets." The ministry also stated that overall field staffing and funding levels would be insufficient to effectively address identified surveillance monitoring gaps.

IMPLICATIONS OF THE 2010 PWPMP PLAN

The PWPMP was created to provide long-term trend data on representative terrestrial vertebrate species. Under Declaration Order MNR-71, the ministry is required in the Program Plan to outline priorities, representative species to be monitored, and proposed activities and schedules for the program. However, the 2010 Program Plan does not include all of these required components, and the PWPMP is not meeting its objectives. The failure to undertake required monitoring has environmentally significant implications on a large scale across Ontario.

No List of Representative Species to be Monitored

The Declaration Order specifically requires the ministry to include the representative species it will monitor in its Program Plan. In 1998, the ministry had selected 92 species to monitor, ranging in forest habitat types, taxonomic groups, size, life histories and trophic levels. In its 2004 Program Plan, MNR reduced the number of species to be monitored to just 37 bird species, 5 mammal species and one amphibian species.

The 2010 Program Plan does not list those species that the PWPMP has committed to monitor. Instead, it outlines 354 species that the ministry possibly could monitor under the program. However, this list is problematic as it includes 69 species that do not even occur in the AOU and, thus, are outside of the basic purpose of the program. Yet it excludes other species that were intended to be the crux of the original program, such as moose, white-tailed deer and pine marten. Although there are 26 bird species noted in the Program Plan as having "large declines" either Ontario-wide or in part of Ontario's forests, no mention was made of how the program is addressing this concern.

Inadequate Provision of Long-Term Provincial Trend Data

MNR has no plans for any long-term data collection in the five-year term of the Program Plan, outside of that undertaken by third-party organizations on their own initiative or under other ministry programs that are unrelated. Rather than collecting information under the PWPMP itself, it appears that the ministry is using the results from other sources, such as the Breeding Birds Survey and migration monitoring surveys (through partnership with Bird Studies Canada and the federal Canadian Wildlife Service) or MNR's harvest monitoring programs (e.g., trapper surveys regarding fur-bearing animals) to meet the requirements of its Class EA conditions.

The ministry outlines deficiencies in its current surveillance monitoring efforts, providing further acknowledgement that the program is not collecting the necessary data. For birds, the Program

Plan states that "existing surveys will be useful for calibration and validation of an AOU-wide sampling program but none of them was designed to provide information with which to evaluate the results of management decisions (forest or otherwise)." For mammals, the ministry notes that its existing surveys for moose, white-tailed deer and species harvested for fur were designed to inform harvest management decisions and not to provide information relative to forest management activities, but that data collected through those surveys could support surveillance monitoring efforts. Even though some of these survey programs are mandatory, return rates are unreliable. Moreover, tracking the number of individuals hunted or trapped annually in no way substantiates the impact that timber harvesting is having on a species. MNR notes that a single third-party surveillance monitoring program provides statistically reliable population information for seven amphibian species in Great Lakes coastal marshes. No surveillance monitoring for reptiles in the AOU is undertaken or planned.

MNR states in the Program Plan that it will evaluate broad-scale habitat supply patterns for wildlife using the ministry's existing Forest Resources Inventory (FRI). However, the ministry has previously outlined concerns about using the FRI to estimate habitat, and recent studies have demonstrated that there may be low correspondence between the FRI (undertaken remotely by aerial survey) and data collected in the field. MNR researchers noted that, although the inaccuracies would vary by wildlife and tree species, "it is possible that current forest harvesting practices based on these data do not fulfil the intended goals for provision of wildlife habitat."

Overall, the Program Plan reports that there is very little reliable long-term wildlife population trend information; no reliable data are available for the majority (70 per cent) of the AOU species identified in the plan. For species for which data are available, few data are in fact collected in the AOU, with the exception of four bird species. Instead, they are collected in Great Lakes marshes, central Canada or southern Ontario and may not be representative of species' status in the area where forestry is actually occurring.

Mandatory Reports are Late or Non-Existent

The ECO requested the last three years of the program's annual reports referred to in the 2010 Program Plan; these reports are intended to provide an overview of the progress of program activities in achieving targets and maintaining the program's direction. In response, the ECO received a one-page spreadsheet outlining the activities of the PWPMP. Under the column "What are the results to date (status & long-term population trends for specific wildlife species)?" in 2008/2009 MNR stated "Nothing to Report." Under the same column in 2010/2011, the ministry stated, "Annual variation in population processes for many species and the absence of a comprehensive provincial multi-species monitoring program with sufficient sampling intensity and geographic coverage preclude making reliable statements about individual species status or trends from existing annual data."

The ECO also requested the Status Reports for birds, mammals, amphibians and reptiles, which the Program Plan states would be completed in 2010 and 2011. The ministry stated that the Birds of Ontario Status Report was a two-part report, consisting of: (1) an academic journal article written several years earlier; and (2) a four-page section in the State of Ontario's Biodiversity report, completed in 2010 by the third-party Ontario Biodiversity Council. The ministry further stated that the reports for mammals and amphibians/reptiles were still in preparation, noting that the year 2011 in the Program Plan actually referred to the ministry's 2011/12 fiscal year; MNR noted that these reports would be available in April 2012. However, by June 2012, these reports remained unavailable.

ECO COMMENT

The ECO concludes that MNR's wildlife monitoring program is in a state of abject failure. Despite its name, the ministry's Provincial Wildlife Population Monitoring Program is not provincial in scale, does not address wildlife other than a few bird species, and does not actually undertake any direct monitoring. The ECO has previously warned that commercial forestry in Ontario is effectively a grand experiment on public lands, which makes it imperative that MNR undertake rigorous monitoring and research to ensure forest management direction is ecologically sound. This program was legally required by the Timber Class EA to test the hypothesis that commercial timber harvesting activity is not having an impact on the province's forest-dwelling species. After 18 years, the program still does not provide Ontarians any assurance that forest management activities are not having a negative impact on wildlife: MNR still has literally nothing to report.

In recent years, it has become clear that the program has failed to achieve its own objective: to monitor and assess the status and trends of forest wildlife populations and their habitats, in order to inform MNR policy and management decisions. The ECO perceives this failure as the result of years of degradation on two fronts: MOE's abandonment of its environmental assessment responsibilities to ensure MNR's compliance with its Declaration Order; and MNR's chronic underfunding, which began just after the ministry was tasked with this program.

By failing to ground-truth the impacts of forest management actions on wildlife species at the provincial scale, the ECO believes that both MNR and MOE are flagrantly in contempt of their responsibilities to sustainably manage Ontario's forests in the spirit of the original Timber Class EA and the *Crown Forest Sustainability Act, 1994*. The Timber Class EA (and later the Declaration Order) created a system of "checks and balances" in forest management — the ministry's monitoring program is meant as a critical "check" that remains unfulfilled. MOE still retains responsibility for examining MNR's compliance, as it approved the Declaration Order — despite its abdication of oversight by removing the requirement for MNR to seek re-approval. MOE should not leave it up to the public to hold MNR accountable through external avenues, such as judicial reviews.

Although MNR claims that it is meeting the requirements of its Declaration Order condition related to wildlife population monitoring, its monitoring efforts are not remotely close in any reasonable way to fulfilling what was originally intended. Third-party collected data, concentrated in the southern parts of the province and extreme south of only some parts of the AOU, have limited relevance and do not constitute the province-wide, long-term system originally envisioned. More problematically, since the ministry has not used a consistent set of species to monitor since the program began in the mid-1990s, it still does not have the long-term data necessary to appropriately assess and analyze wildlife population trends at the AOU level.

It is important to note that long-term monitoring data would confer a number of benefits on the operation of the ministry as a whole, providing independent population data for its: wildlife management and harvest allocations; biodiversity and state of the resource reporting; responsibilities under the Convention on Biological Diversity; and climate change monitoring. Unfortunately, rather than designing the monitoring program with a forestry focus and allowing other programs to share the data, MNR has been cobbling together information gathered for non-forestry purposes in order to meet, perhaps only in a thinly veiled bureaucratic sense, the terms of its Declaration Order. The result is that the available information is inadequate to provide for forestry operation planning, or to inform any policy change as a result of provincial-scale species declines.

A clear understanding of how forest management activities are (or are not) affecting wildlife populations is in the best interests of all parties — the government, the public, and the forest industry. For example, the Forest Stewardship Council Canada's boreal standard is premised on the fact that wildlife monitoring is the responsibility of provincial governments; forestry companies need only to monitor local species within their specific plan area. MNR's failure to undertake provincial-scale monitoring of terrestrial wildlife species should be cause for concern for forest companies in their commendable efforts to maintain industry certification.

Without the proper functioning of the wildlife monitoring program, Ontario is blind to the impact forestry is having provincially on wildlife species. The failure to carry out this monitoring program ultimately means that Ontario will not have the ability to anticipate change or adapt in time to avoid negative impacts, such as the collapse of wildlife populations or ecological systems. As this monitoring program is the only one legally required of MNR and it is still deteriorating, the ECO has grave concerns about the vulnerability of this and other monitoring programs in the midst of fiscal austerity. The ECO warns that the effective functioning of this program is an obligation not only under multiple laws, but is also a responsibility to future generations to steward the forests that they will inherit. We should not lose touch with the health of our forests.

RECOMMENDATION 2	The ECO recommends that MOE investigate MNR's compliance with the Declaration Order authorizing timber harvesting under the *Environmental Assessment Act.*

For a more detailed review of this decision, please refer to Section 1.17 of the Supplement to this Annual Report. For ministry comments, please see Appendix C.

2.7 | Protecting Algonquin's Brook Trout from the Impacts of Commercial Timber Harvesting

The brook trout (*Salvelinus fontinalis*), also known as speckled trout, is a freshwater fish species native to Ontario. Brook trout occupy clear, cool, well-oxygenated waters and can be considered an indicator for good water quality and ecosystem health. In Canadian Shield waters, brook trout spawn in gravel beds associated with flowing groundwater discharges supplied by local groundwater recharge areas. Suitable spawning sites are relatively rare and are a limiting factor in brook trout reproduction. Groundwater flow rate is considered a major factor in habitat quality and has been shown to strongly influence the reproductive success and survival of young brook trout.

Algonquin Provincial Park holds the highest concentration of natural brook trout lakes in the world and is considered one of the few remaining refuges for brook trout in Ontario. Most of Algonquin's brook trout populations — across 240 of Algonquin's lakes — are genetically distinct and have evolved in isolation from others in the province for thousands of years.

Although few studies have quantified the impacts of timber harvesting and related activities on brook trout habitat in Ontario, it is believed that forestry operations can adversely affect brook trout spawning and nursery habitat. For example, the loss of the moderating effects of tree cover may result in higher groundwater temperatures. In addition, road construction and aggregate extraction have the potential to disrupt groundwater recharge or flow, affecting habitat quality and availability.

In June 2011, two applicants requested that the Ministry of Natural Resources (MNR) review forest management policies for Algonquin Provincial Park, asserting that there should be more stringent rules for commercial timber harvesting in Algonquin than in other Crown forests.

Request for Review of the *Provincial Parks and Conservation Reserves Act, 2006*

The *Provincial Parks and Conservation Reserves Act, 2006* (*PPCRA*) prohibits commercial timber harvesting in all provincial parks and conservation reserves — with the exception of Algonquin Provincial Park. The applicants requested a review of this exemption, stating that MNR "has not protected the Park's ecosystems consistent with its status as a Provincial Park." The applicants believe that as a result, "unique features such as the many self-sustaining brook trout populations found in Algonquin Park are not given special recognition."

Further, the applicants were concerned that the *PPCRA* allows new aggregate pits in Algonquin Provincial Park in support of forestry operations. The applicants pointed out that aggregate removal can alter the level and flow patterns of groundwater, such that "aggregate removal can never be sustainable, in the same way that vegetation [removal] can, and therefore cannot be rehabilitated; only 'cosmetically landscaped.'"

Request for Review of the Stand and Site Guide

MNR's Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales (the "Stand and Site Guide") provides direction for and restrictions on timber harvesting and aggregate operations in and around brook trout habitat, including Area of Concern (AOC) prescriptions for groundwater recharge areas associated with brook trout spawning areas, and standards and guidelines for harvest operations around lakes, ponds, rivers and streams. The applicants described a number of concerns with the Stand and Site Guide that they believe could lead to negative impacts on brook trout and its habitat, including the following:

- There is a lack of guidance regarding nursery creeks, a critical component of self-sustaining brook trout populations.
- Wood removal, skidding, road building and the accidental introduction of pollutants (such as antifreeze and road salt) can result in negative impacts, such as ground compaction, redirected groundwater flow and pollution, that would not occur through natural disturbances.
- Aggregate extraction is only prohibited in the groundwater recharge area, rather than the entire catchment area.
- Genetic diversity is not considered in the Stand and Site Guide, but the loss of unique Algonquin Provincial Park populations would be an unacceptable genetic loss.

The applicants expressed concern that cumulative degradation of brook trout habitat could result over recurring timber harvesting rotations due to "simultaneous negative factors such as ground pollutants, soil compaction, calcium loss and aggregate removal."

MINISTRY RESPONSE

On November 14, 2011, nearly 75 days after the legislated deadline for the ministry response, MNR advised the applicants that it was denying the application and would not be conducting a review under the *Environmental Bill of Rights, 1993* (*EBR*). The ministry did not undertake a review of the *PPCRA*, as *EBR* section 68(1) allows a ministry to deny a request to review a decision made in the past five years; the *PPCRA* was passed three days less than five years preceding the date of the application for review. Similarly, MNR did not undertake a review of the Stand and Site Guide as it was finalized in 2010. Nonetheless, the ministry did respond to some specific issues raised by the applicants.

The ministry stated that it considers that a forest management plan, prepared in accordance with the requirements of the *Crown Forest Sustainability Act, 1994* (*CFSA*), "meets the requirements for ecological integrity as defined by the *PPCRA*." MNR noted that forest management planning requirements provide flexibility to address the particular needs of the park, including the protection of brook trout lakes and nursery creeks.

MNR also responded to the detailed concerns raised by the applicants regarding the Stand and Site Guide, including the following:

- Although the Stand and Site Guide does not explicitly use the term "nursery creek," the Guide provides direction for all streams, imposes additional restrictions where operations have higher potential for negative impacts on fish species and habitats, and provides slope-based AOC prescriptions for streams known to provide nursery habitat or steam segments close to brook trout lakes.
- Since the ministry identified deposition of sediment — associated with building roads, landings and aggregate pits — as the primary adverse effect of forest management operations along shorelines, these activities are prohibited or restricted within shoreline AOCs. The ministry stated that harvest, renewal and tending operations conducted appropriately "will not cause sedimentation in aquatic features and, therefore, are permitted within a recharge area."
- Direction for aquatic ecosystems, shoreline areas, and recharge areas associated with brook trout spawning sites in the Stand and Site Guide was developed "to ensure consistent protection of all fish habitat ... regardless of the genetic uniqueness of the fish populations."

MNR further stated that the program's effectiveness in detecting the effects of forest management operations will be investigated further during the review of the Stand and Site Guide in 2015.

For the full text of the ministry's decision, see our website at www.eco.on.ca.

ECO COMMENT

The ECO accepts the ministry's decision to deny this application for review, as both the *PPCRA* and the Stand and Site Guide were finalized within the five years preceding the date of the application's submission. Nevertheless, the ECO believes the request highlights substantive concerns warranting the ministry's attention.

The ECO has previously voiced concerns over conflicting management priorities in Algonquin Provincial Park. The ECO disagrees with MNR's argument that because the Algonquin Park Forest Management Plan was prepared in accordance with the requirements of the *CFSA*, it therefore meets the legal requirement for maintaining ecological integrity as directed by the *PPCRA*. Ontario prohibits commercial timber harvesting in all provincial parks and conservation reserves — except in Algonquin Provincial Park — for a reason: industrial logging clearly poses a substantive risk to ecological integrity. Simply because an activity is legal does not mean it is ecologically justifiable.

The ECO strongly urges MNR to fully and publicly review the Algonquin Provincial Park Management Plan, which predates the *PPCRA* and thus fails to reflect the Act's legal direction to maintain ecological integrity as the first management priority. Moreover, the park's 1998 management plan committed MNR to developing specific resource management plans to address aggregate resources, water, vegetation, wildlife, cultural resources and research; none of these ancillary plans for Algonquin Provincial Park have been developed.

MNR also has failed to implement any of the recommendations from the Ontario Parks Board and the Algonquin Forestry Authority Board on lightening logging's footprint in Algonquin. Connecting both issues, the ECO echoes the call in our 2005/2006 Annual Report for MNR to undertake a comprehensive public review of its policy allowing logging in Algonquin.

The ministry has indicated that it expects that tree harvesting, undertaken as directed by the Stand and Site Guide and other forest management guides, is not likely to produce effects dramatically different from natural disturbances. But such an assertion should not be accepted on faith; it needs evidence and objective evaluation. As the ECO noted in our 2009/2010 Annual Report, MNR's approach in the Stand and Site Guide to treat "policies as hypotheses" will amount to ill-informed policy directions if monitoring programs are not thorough, well-funded and completed in a timely manner. While the impacts of increased shoreline harvesting on brook trout are still relatively unknown, MNR's effectiveness monitoring program for the Stand and Site Guide has assigned a "low priority" to the question of shoreline harvesting impacts on aquatic systems.

Given the unique status of Algonquin brook trout, the ECO urges MNR to focus research specifically on evaluating the effectiveness of existing forestry and aggregate extraction practices in maintaining the park's brook trout populations.

The ECO urges the ministry to publicly report any research findings regarding shoreline harvesting prior to the scheduled 2015 review of the Stand and Site Guide in order to provide the public with adequate information for useful participation in the review.

Brook trout conservation provides MNR an opportunity to fulfil responsibilities under the international Convention on Biological Diversity (for more information, see the ECO's 2012 Special Report, "Biodiversity: A Nation's Commitment, An Obligation for Ontario"). One relevant target set by the Convention is to develop and implement strategies for minimizing genetic erosion and safeguarding genetic diversity of socio-economically or culturally important species by 2020. Algonquin's brook trout populations are unique in the world and together with other rare or distinctive brook trout populations — including the Aurora trout in Temagami and coaster brook trout in Lake Superior — warrant special recognition and planning for the protection of their genetic diversity.

For a more detailed review of this decision, please refer to Section 2.3.3 of the Supplement to this Annual Report. For ministry comments, please see Appendix C.

2.8 | A Fine Line: Implementing the Ecological Framework for Recreational Fisheries Management

During the summer on many lakes or rivers in southern Ontario you will likely find at least one angler out on the water before dawn hoping to catch the next big walleye, bass or other sport fish. Recreational or "sport" fishing is a popular pastime for both residents and tourists. Ontario's water bodies and fish — some 250,000 inland lakes, thousands of rivers and the Great Lakes contain about 150 of Canada's 200 freshwater fish species — make the province renowned for fishing.

However, freshwater fish species are among the most threatened group of vertebrates worldwide and 26 species are at risk in Ontario. Additionally, Ontario's aquatic biodiversity is threatened by habitat loss and alteration, invasive alien species, water pollution, climate change and over-harvesting. For the Ministry of Natural Resources (MNR), managing recreational fishing is often a balancing act between providing angling opportunities to support the $1.8 billion/year industry and ensuring that fish populations are maintained at appropriate levels to assure that aquatic biodiversity is preserved.

Over the last seven years, MNR's management of sport fishing has undergone a major policy shift under the new Ecological Framework for Recreational Fisheries Management in Ontario (2005) (the "Ecological Framework" or "Framework"). In our 2006/2007 Annual Report, the ECO stated that we would monitor implementation of the Ecological Framework. This article examines MNR's efforts over the last few years.

The Regulation of Recreational Fisheries in Ontario

In Ontario, recreational fisheries are managed by MNR under the federal *Fisheries Act* and the provincial *Fish and Wildlife Conservation Act, 1997* (*FWCA*). Unlike Ontario's management of commercial fisheries, which restricts the number of fishing licences and sets harvest quotas, MNR does not limit the overall number of angling licences (for additional information on the management of commercial fisheries in Ontario, refer to the ECO's 2010/2011 Annual Report.) Instead, the ministry limits angler activity through open access methods, such as setting: fishing seasons; daily catch, possession and fish size limits; and establishing sanctuaries. Resident and non-resident anglers are required to purchase either a sport fishing or a conservation fishing licence. Catch and possession limits may differ between licences — generally speaking, sport fishing licence holders can catch and keep more fish than conservation fishing licence holders. Each year, MNR revises and publishes the Ontario Recreational Fishing Regulations Summary — the angler's guide on what, when, where and how to fish as defined in the regulations.

Ecological Framework for Recreational Fisheries Management

Previous Lake-by-Lake Approach

Prior to the Ecological Framework, MNR generally managed lakes on an individual basis. MNR would establish broad fishing divisions to apply regulations across large areas. However, if MNR received complaints that fishing quality had declined on a specific lake, it would survey the lake. If the survey results confirmed that fish populations had declined, MNR might prescribe new seasons or catch limits for that lake, creating an exception to the general division rules. This system led to thousands of exceptions for individual lakes as a response to issues that arose.

The ministry only collected data for lakes that were large, economically important, or had reported concerns about their fish population status. MNR focused monitoring efforts on popular recreational fish species and did not obtain data on fish communities as a whole. What resulted was management that: ultimately failed to account for anglers shifting fishing pressure between lakes; made monitoring difficult; and created long, complicated and hard to enforce fishing regulations.

New Landscape-level Approach

Under the new Framework, MNR replaced the 37 fishing divisions with 20 fisheries management zones (FMZs) in 2008. The new zones are based on old division boundaries, ecological factors (including watersheds and climate zones) and angler use patterns (such as fishing pressure and road networks) (see Figure 2.8.1). For each zone, MNR will:

- establish an advisory council;
- create a fisheries management plan;
- amend the fishing regulations under the *Fisheries Act* based on the plan;
- monitor and assess the zone on a regular basis; and then
- amend the plan and management actions, if necessary, based on monitoring and assessment results.

Figure 2.8.2 illustrates the critical role ascribed to planning and monitoring as the basis for informed decision making in the Ecological Framework. For additional information on the Framework, refer to our 2006/2007 Annual Report.

MNR also established 22 specially designated waters — such as Lake Simcoe, Lake of the Woods and Lake Nipigon — that may require more intensive management, planning and monitoring than the regular FMZs due to unique biological or socio-economic concerns.

Under the Ecological Framework, MNR developed a new Broad-Scale Monitoring Program to detect changes in fish communities and aquatic ecosystems over time and to provide an inventory of aquatic communities. The program examines a sample of lakes in each FMZ, including "fixed lakes" that will be re-examined every five years and "variable lakes" that will be randomly selected each monitoring cycle. Moreover, surveys will collect data on other elements of the ecosystem, such as zooplankton, invasive species and water chemistry. The program aims to sample five per cent of the lakes in Ontario over each five-year monitoring cycle, a

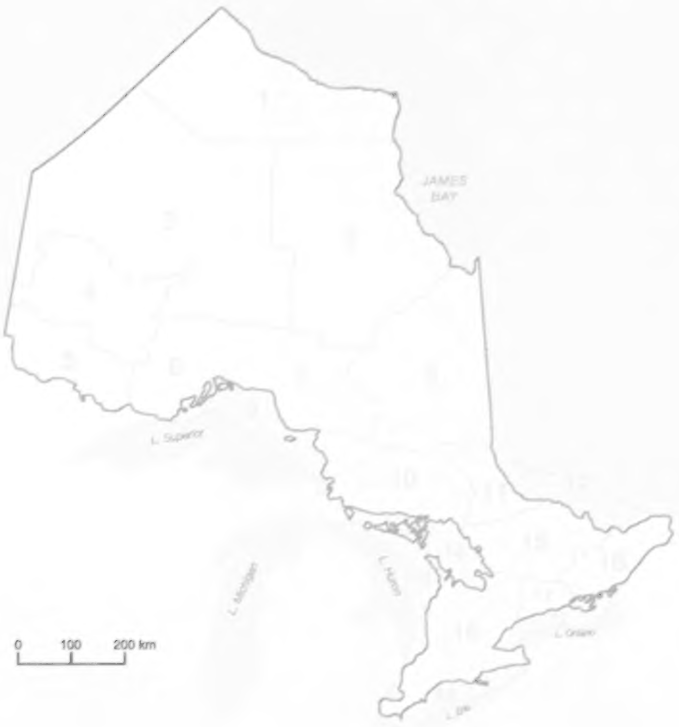


Figure 2.8.1.
Ontario's fisheries management zones (Source: Ministry of Natural Resources, 2005).

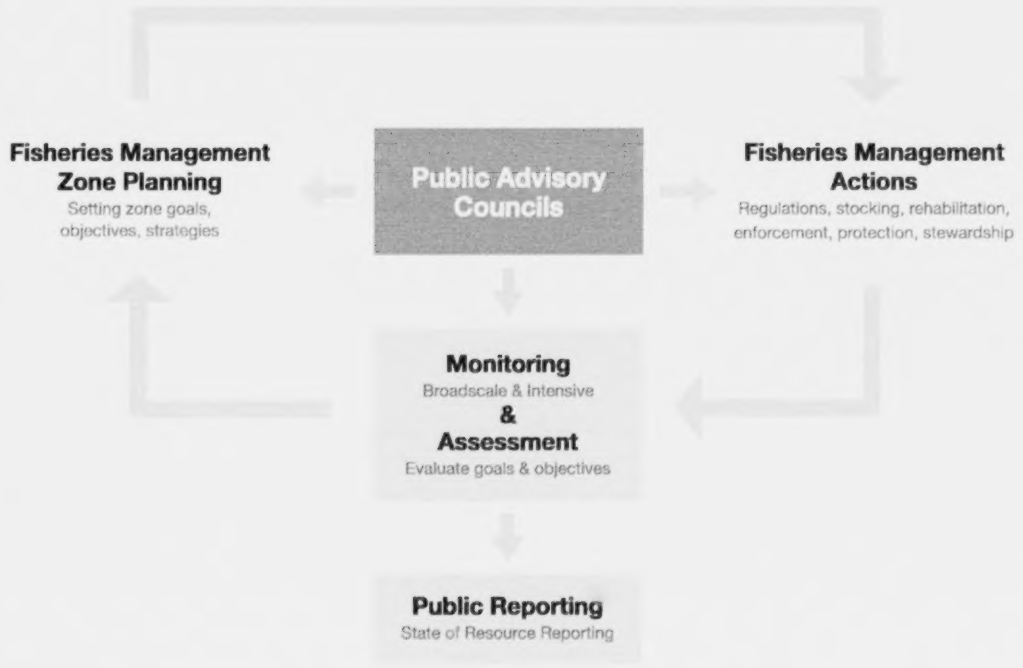

Fisheries Management Zone Planning
Setting zone goals, objectives, strategies
Public Advisory Councils
Fisheries Management Actions
Regulations, stocking, rehabilitation, enforcement, protection, stewardship
Monitoring
Broadscale & Intensive
&
Assessment
Evaluate goals & objectives
Public Reporting
State of Resource Reporting

Figure 2.8.2
Ecological framework for fisheries management (Source: MNR, 2011).

reduction from its original goal to sample ten per cent of the province's lakes over the same period. MNR will also undertake more regular, intensive monitoring in specially designated waters. Individual lake reports and FMZ status and trends reports will be prepared at the end of the five-year monitoring cycle. An overall provincial State of the Resource report will also be prepared every five years.

As part of the Broad-Scale Monitoring Program, the ministry uses aerial surveys to observe angler effort (e.g., count boats on lakes). MNR analyzes this information along with gillnetting survey data to compare estimated fish population levels versus fishing effort to determine sustainable (or unsustainable) levels of fishing. The ministry also works with the federal government in a Survey of Recreational Fishing in Canada undertaken every five years. This survey provides the only published source of statistics on effort, harvest and economics of recreational fishing for all of Ontario. MNR also carries out voluntary angler surveys ("creel surveys"), sometimes on an *ad hoc* basis, for particular areas or species of interest or concern.

To ensure consistent management, MNR created fish species regulatory tool kits for 15 of the most popular sport fish species. The tool kits provide guidelines and options for managing certain sport fish species (e.g., lake trout [*Salvelinus namaycush*], muskellunge [*Esox masquinongy*] and northern pike [*Esox lucius*]), specifically during the FMZ planning and regulations amendment processes.

Implementation of Ecological Framework

Slow and Inconsistent "Phased-In" Implementation

MNR's phased roll-out has been slow and inconsistent across the province, partially due to limited or inadequate resources; for example, MNR staff must complete work in one zone before they can start another. In 2007, MNR established pilot Advisory Councils in zone 6 (Thunder Bay, Nipigon, Dryden), zone 10 (Sault Ste. Marie and Sudbury) and zone 17 (Peterborough and the Kawartha Lakes). MNR has also established councils in ten additional zones since 2008; however, seven zones still do not have a council in place.

To date, only 2 out of 15 inland zones have fisheries management plans in place (zone 6 and zone 17), and one zone has lake trout objectives and management strategies (zone 10) but no overall plan for other fish species or communities. Five Great Lakes FMZs are managed differently from inland zones; they are managed through a bi-national agreement under the auspices of the Great Lakes Fisheries Commission. The Great Lakes zones have existing fish community objectives, species specific management plans and recovery plans. Fisheries management plans are an essential part of the Ecological Framework process as these documents provide direction, based on current environmental conditions and public input, on how to manage, monitor and assess zones. While plans identify regulation amendments, they also identify other important fisheries management actions, such as enhancement or rehabilitation of critical spawning habitat or programs to monitor the distribution and abundance of aquatic invasive species.

Fisheries Management Plans Consistent with Species Tool Kits

The ECO assessed the completed management plans for zones 6, 10, and 17 to determine if recommendations and regulatory amendments were consistent with the direction provided in the species regulatory tool kits. Plans and regulatory amendments were generally consistent with guidance and options provided in the tool kits. For example, the plan for zone 10 recommended changes to the lake trout regulations (e.g., reduced possession limit) in response to poor abundance and unsustainable fishing levels — actions in line with the species tool kit. MNR amended the regulations as recommended. However, the plan in FMZ 17 called for extending the largemouth and smallmouth bass (*Micropterus salmoides* and *Micropterus dolomieu*) season beyond the recommended date in the tool kit to promote bass fishing because of healthy and increasing populations. MNR amended the regulations as suggested in the plan. The ECO also found that MNR amended fishing regulations in zones that do not have approved fisheries management plans, sometimes based on advice from zone advisory committees.

Missing Walleye and Sunfish Tool Kits

Despite creating 15 species regulatory tool kits, MNR is still missing regulatory tool kits for several species popular with anglers — walleye (*Sander vitreus*) and sunfish species. In 2005, anglers caught more walleye than any other species in Ontario (see Figure 2.8.3). While MNR consulted on a suite of regulatory options for managing walleye populations in 2006, it has not yet approved a regulatory tool kit for the species.

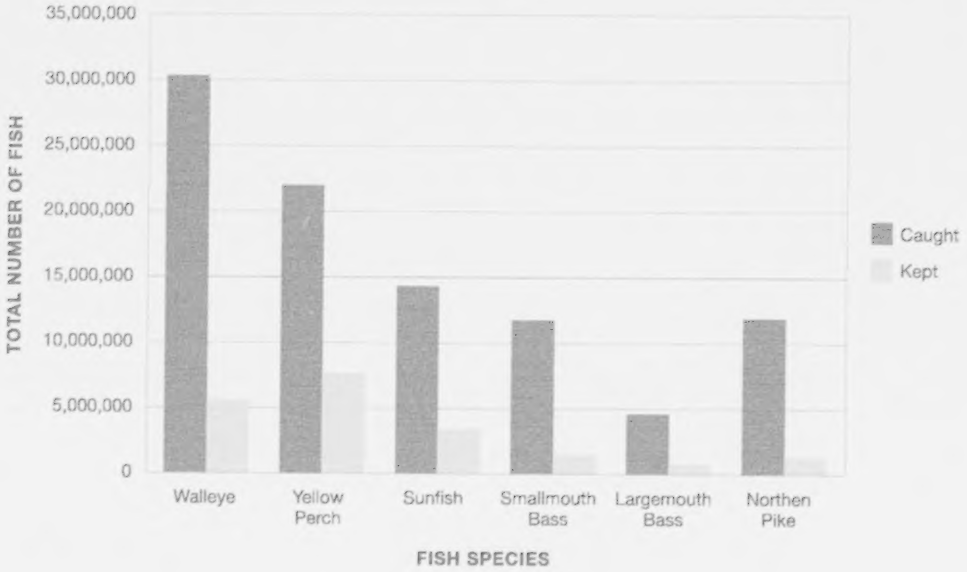


Figure 2.8.3.

Top fish species caught (total number of fish caught and released) and harvested (total number of fish kept) by anglers in Ontario during 2005 (Source: Ministry of Natural Resources, 2009).

The sunfish family includes bluegill (*Lepomis macrochirus*), pumpkinseed (*Lepomis gibbosus*) and other members, excluding rock bass (*Ambloplites rupestris*), white crappie (*Pomoxis annularis*) and black crappie (*Pomoxis nigromaculatus*). Despite there being no tool kit for sunfish, MNR recently made major changes to the sunfish regulations in all FMZs, e.g., adding size and harvest limits where none previously existed. The harvest limits in some zones are generous – for example, up to 300 sunfish per day. These limits are much higher than in New York or Michigan states, encouraging tourist anglers to continue to harvest large numbers of sunfish. MNR also created a new winter open sunfish season to increase angling opportunities for these species.

Parks for Fish?

Anglers can fish in Ontario's Provincial Parks, in accordance with the fishing regulations. However, MNR can and has established fish sanctuaries (bodies of water where no fishing of any kind is permitted) for specific lakes within park boundaries. For example, there are six lake sanctuaries in Killarney Provincial Park.

Although the *Provincial Parks and Conservation Reserves Act, 2006* (*PPCRA*) allows for the creation of aquatic-class parks to protect such ecosystems, the government has not yet proclaimed in force the section of the Act that would enable their creation nor has it defined what activities are permitted or prohibited. The establishment of aquatic protected areas is a key component to conserving Ontario's biodiversity; not only does their creation align with

2.8.1. MONITORING REVEALS “MIRACLE” FISH

Researchers in Algonquin Provincial Park recently highlighted the importance of monitoring in providing an inventory of the province’s fish species. In 2010, researchers from MNR’s Harkness Laboratory of Fisheries Research discovered healthy numbers of blackfin cisco (*Coregonus nigripinnis*), a species currently designated as globally extinct, in two Algonquin lakes. The absence of development, commercial fishing and invasive species may have allowed this rare species to survive in the park while it disappeared from the Great Lakes — a finding that researchers consider a “miracle.”

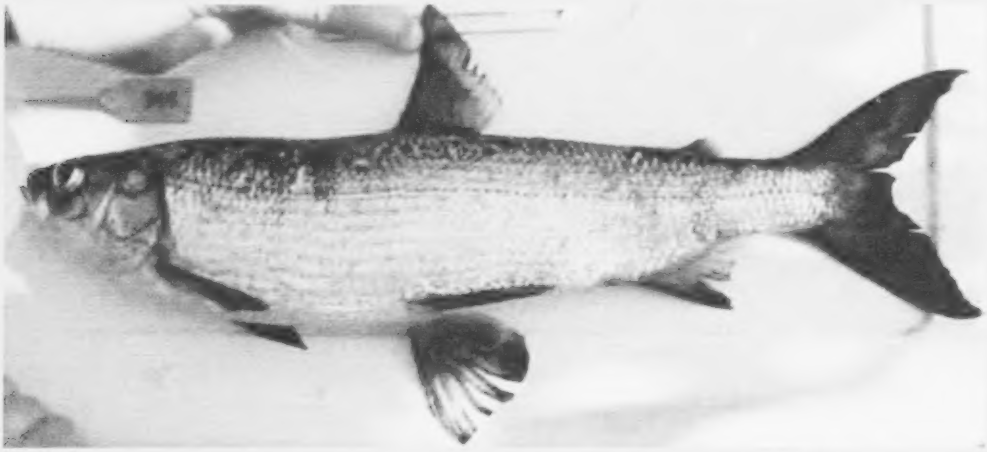


Figure 2.8.4.
Blackfin cisco (Source: The Raven, 2011).

Canada’s commitments under the Convention on Biological Diversity, but this type of protected area has been demonstrated to be an effective management tool in ensuring a stable source population for recreational and commercial fishing efforts in adjacent waters.

Improved Monitoring System

In 2009, ministry staff monitored fish communities and aquatic ecosystems in 179 lakes across Ontario, and MNR estimates that 800 lakes have been sampled since the advent of the new Broad-Scale Monitoring Program. The ministry will be able to use the data to identify trends through time (in subsequent monitoring cycles) and approximate the health of fish populations in specific water bodies. Further, MNR hopes that data collected in this program will be used to measure outcomes of management decisions and inform an adaptive management approach.

MNR researchers have begun to develop models that examine the influence of non-catch-related aspects of fishing (e.g., travel distance, aesthetics and regulations) on angler behaviour. Further, information collected from the ministry’s recently launched Fish ON-Line tool may provide a greater understanding of the water bodies and species of greatest interest and may become a proxy for measuring angling effort.

No Monitoring of Rivers and Streams

Rivers and streams are not included in the Broad-Scale Monitoring Program. However, monitoring rivers is important; rivers are necessary spawning and nursery habitat for many fish species; there is more river habitat than lake habitat in some areas of Ontario (e.g., FMZ 16); and the top ten most fished waters in Ontario include the Ottawa, St. Lawrence and Grand rivers. The ministry acknowledges that its failure to monitor rivers in the program represents a data gap. However, MNR has also indicated that anglers target rivers less often than lakes, with the exception of Great Lakes tributaries in southern Ontario.

Fish Culture and Stocking

MNR considers the practice of stocking — releasing artificially reared fish into provincial waters — to be vital to fisheries management in the province. The ministry operates nine fish culture stations and stocks approximately 8 million fish to 1,200 lakes across the province each year; five of the ten primary species cultured are native to Ontario. MNR divides its stocking effort equally for two purposes: restoration (e.g., to improve lake trout populations in the Great Lakes); and the express purpose of fishing — also known as a "put-grow-take" fishery. The ECO will examine MNR's fish culture and stocking programs in a future Annual Report.

ECO COMMENT

Ontario's fish species, including those targeted by anglers, are important components of lake and river ecosystems. Worldwide, many commercial fisheries have collapsed from over-harvesting. Historically viewed as less harmful than commercial fishing, recreational fishing can also contribute to freshwater fish population declines, for example lake trout in southern Ontario and walleye in Alberta. Technological advances have allowed anglers to travel longer distances faster in order to locate and catch fish in less time (e.g., by using high speed fishing boats equipped with fish-finding sonar). MNR's primary fisheries management objective should be to maintain, if not enhance, native fish populations and Ontario's aquatic biodiversity. This objective should not be secondary to promoting the social and economic benefits of recreational fishing; the industry's success is reliant on healthy and viable fish populations. MNR's shift to managing recreational fisheries from the "lake-level" to a "landscape-level" under the Ecological Framework is more proactive than the previous approach. Creating fisheries management plans that assess the current status of fish populations, establish management objectives and recommend management actions on a large scale — the FMZ — is a more holistic approach than managing each lake in isolation. However, slow and inconsistent implementation of the Framework could jeopardize its intent. The ECO encourages MNR to:

- Provide adequate resources to consistently implement the Ecological Framework in a timely manner. In our 2010/2011 Annual Report, the ECO cautioned that MNR's capacity is stretched too thin to meet its core responsibilities.
- Expeditiously prepare fisheries management plans for all zones in Ontario. In 2007, the Auditor General of Ontario cautioned that "the absence of formal fisheries management plans can result in inconsistent or detrimental decision-making." Additionally, since the Ontario Fishery Regulations under the federal *Fisheries Act* are not prescribed under the *Environmental Bill of Rights, 1993*, when MNR amends the fishing regulations without an approved fisheries management plan, it denies the public an opportunity to review and comment on the Environmental Registry.

- Create species regulatory tool kits for walleye and sunfish, which are highly sought-after and harvested species by anglers.
- Create additional policies and guidance documents to aid MNR staff and fisheries advisory committees during implementation of the Ecological Framework (e.g., for creating fisheries management plans).

The ECO is pleased with the long-term commitment that MNR has made to independent, unbiased population monitoring of fish communities in Ontario's lakes. As the new monitoring system has been designed to look at entire fish communities, rather than just species of interest to anglers, data will be useful not only for the recreational fishery but for other applications as well. For example, it will help managers understand the general state of Ontario's biodiversity, track changes to aquatic communities due to climate change, and help the province meet its obligations under the United Nations Convention on Biological Diversity (for more information on Ontario's responsibilities under the Convention, see the ECO's 2012 Special Report, "Biodiversity: A Nation's Commitment, an Obligation for Ontario). The ECO urges the ministry to:

- Ensure that monitoring of lake-specific fish populations of concern (for example, in lakes with high angling pressure) will not be lost in the transition to FMZ-wide, landscape-level monitoring.
- Maintain its Broad-Scale Monitoring program over the long term and implement an equivalent program for monitoring fish communities of rivers and streams.
- Continue its efforts in assessing catch and human behaviours to better understand both the social and ecological landscapes of Ontario's recreational fisheries.

Ontario's protected areas are special places set aside to "permanently protect representative ecosystems, biodiversity and provincially significant elements of Ontario's natural and cultural heritage and to manage these areas to ensure that ecological integrity is maintained," as mandated in the *PPCRA*. Recreational fishing is allowed in protected areas (except in fishing sanctuaries), in accordance with fishing regulations. The ECO reminds MNR that the ultimate goal of managing fisheries in protected areas is to maintain the ecological integrity of aquatic systems. Similar to specially designated waters, these areas require a different management approach than Crown land in general; blanket fishing zone regulations may not be appropriate for these unique parts of the province that we have collectively chosen to set aside for conservation.

RECOMMENDATION 3	The ECO recommends that MNR proclaim the section of the *Provincial Parks and Conservation Reserves Act, 2006* that authorizes aquatic class parks.

For ministry comments, please see Appendix C.

2.9 | The Province's Forgotten Fauna: Marine Mammals in Ontario

From the vast boreal shield in the north to the rare savannahs in the south, from the Carolinian forests, wetlands, alvars and tallgrass prairies to the enormous freshwater Great Lakes, Ontario boasts a diversity of ecosystems. And with an area larger than most countries, it can be easy to underappreciate the variety of landscapes and wildlife that Ontario possesses. Some Ontarians may even be surprised to learn that Ontario has more than a thousand kilometres of marine coastline. The shores of Hudson Bay and James Bay host a variety of marine mammals, including polar bears, seals, walruses and whales. Though living far from the public eye, these animals comprise an important part of Ontario's biodiversity.

Polar Bears

Polar bears (*Ursus maritimus*) are marine mammals that spend much of the year on sea ice to hunt seals and mate. When the ice melts, however, they are forced onto land where they depend on their body fat to survive. If the ice melts early, bears have less time on the ice to hunt and build up the necessary fat reserves.

Polar bears are distributed globally all over the Arctic, and those found along Ontario's marine coast (see Figure 2.9.1) represent the most southern population in the world. Most polar bears in Ontario belong to the Southern Hudson Bay subpopulation (numbering some 900 animals). While stable over the past 20 years, this population is thought (because of decreases in survival rates and body condition) to be at an ecological "tipping point" and is expected to decline rapidly in the near future. A small percentage of Ontario's polar bears belong to the Western Hudson Bay subpopulation, which declined by 22 per cent between 1987 and 2004 to about 935 animals.

The greatest threat to Ontario's polar bears is climate change. The melting of sea ice is expected to reduce bears' mating and primary feeding habitat, as well as affect the distribution of their prey. Moreover, climate change will likely reduce permafrost and the availability of maternal den sites, and contribute to the severity of storms and winds that could reduce ice thickness and increase ice drift, increasing bears' energy requirements and reducing growth and reproductive rates. Because of climate change, scientists fear the Southern and Western Hudson Bay subpopulations of polar bears will be wiped out within the next 45 years.

Other threats to polar bears include: the fragmentation of habitat and displacement of bears by natural resource exploration and extraction; the biomagnification and bioaccumulation of pollutants in this top predator; the breaking of sea ice and disturbing of prey by marine transportation and commercial fishing; and hunting by humans. Bears from the Southern Hudson Bay subpopulation are harvested not only in Ontario, but also in Nunavut and Quebec, and there is concern that the level of hunting of this subpopulation, over the long term, may be unsustainable.

Ontario's Polar Bear Provincial Park (see Figure 2.9.1) occupies 24,000 km^2 of the Hudson Bay Lowlands and is among the world's largest protected areas. The park protects two critical polar

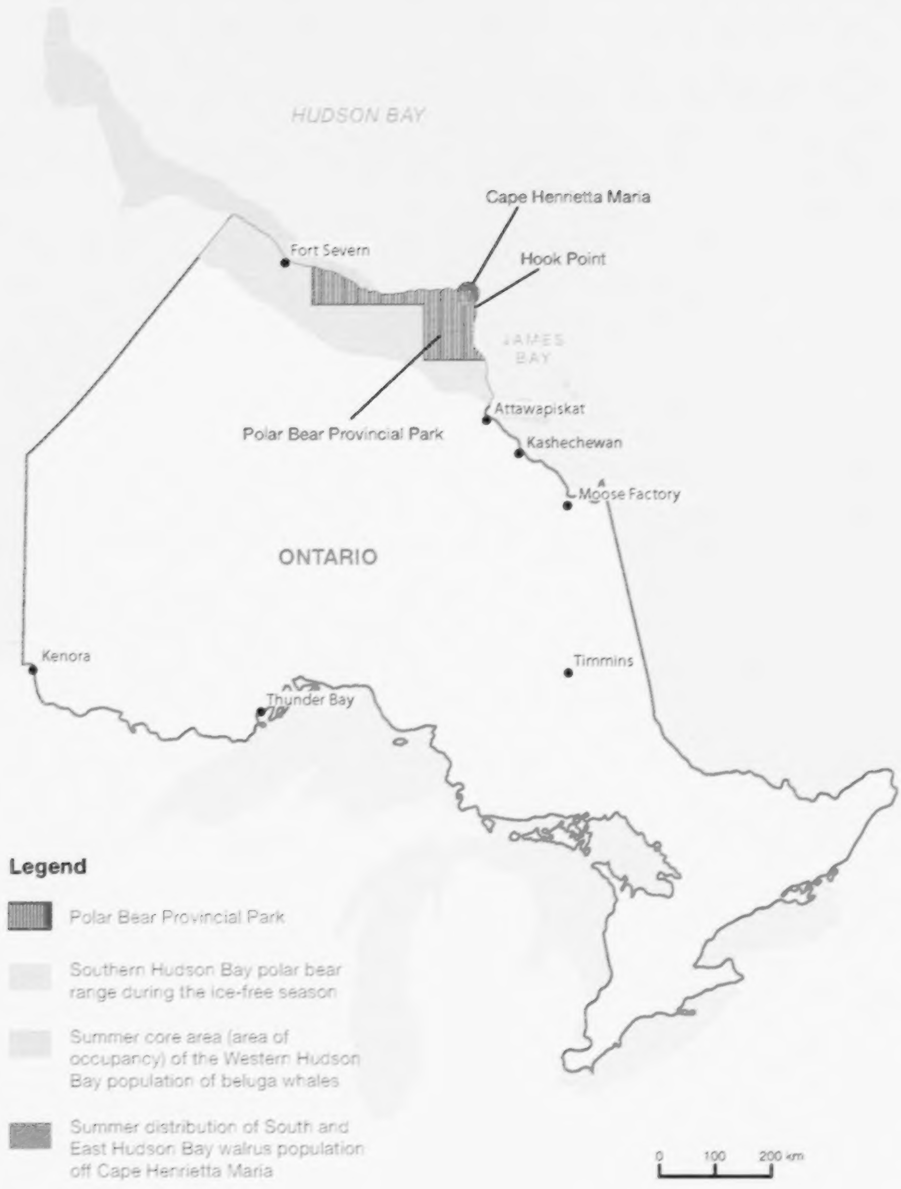

HUDSON BAY
Cape Henrietta Maria
Hook Point
Fort Severn
JAMES BAY
Polar Bear Provincial Park
Attawapiskat
Kashechewan
Moose Factory
ONTARIO
Kenora
Timmins
Thunder Bay
Legend
Polar Bear Provincial Park
Southern Hudson Bay polar bear range during the ice-free season
Summer core area (area of occupancy) of the Western Hudson Bay population of beluga whales
Summer distribution of South and East Hudson Bay walrus population off Cape Henrietta Maria
0
100
200 km

Figure 2.9.1.
The summer distributions of polar bears, beluga whales and walruses in and near Ontario. (Adapted from: the Recovery Strategy for Polar Bear (*Ursus maritimus*) in Ontario, prepared for the Ministry of Natural Resources by M.B. Tonge and T.L. Pulfer, 2011; the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Assessment and Update Status Report on the Beluga Whale (*Delphinapterus leucas*) in Canada, 2004; and the COSEWIC Assessment and Update Status Report on the Atlantic Walrus (*Odobenus rosmarus rosmarus*) in Canada, 2006.)

KILLER WHALES: COMING SOON TO A COAST NEAR YOU?

Climate change and the accompanying reduction in sea ice could cause unexpected and profound changes to arctic ecosystems. For example, sea ice generally prevents killer whales (*Orcinus orca*), with their immense dorsal fins, from surfacing in and navigating through arctic waters. However, as climate change continues to deplete sea ice, orcas may be able to access previously unreachable waters and feed on belugas, seals and other marine mammals in Hudson Bay. Indeed, a recent increase in orca sightings in Hudson Bay has been linked to a decline in sea ice in Hudson Strait, suggesting that orca movements and distribution are affected by decreasing ice cover. Because killer whales are major predators that can reshape marine ecosystems, the observed increase in killer whales may be the first indication of an ecological shift where, as sea ice declines further (and polar bears not only lose access to a feeding platform but also experience increased prey competition), polar bears are replaced as the ecosystem's dominant natural predator.

bear habitats: the coastal summer retreat habitat and the inland maternal denning habitat. If climate trends continue and the sea ice season and permafrost decreases as expected, bears will be forced to spend more time ashore and use inland denning areas, making the park's protection even more important.

Polar bears are listed as threatened under Ontario's *Endangered Species Act, 2007* (*ESA*) and as a species of special concern under the federal *Species at Risk Act* (*SARA*). A recovery strategy for polar bears, required under the *ESA*, was finalized in December 2011. The strategy's recovery goal is to have a viable subpopulation of polar bears that can persist in a changing environment and support traditional uses by coastal Cree communities. Recovery objectives include: reducing the impact of global climate change in Ontario; identifying, protecting and adaptively co-managing polar bear habitat; and developing and implementing effective monitoring strategies. However, the government's response statement, now expected in June 2013 (after the government has consulted the public and likely considered socio-economic concerns), may or may not reflect the original goals and objectives set out in the recovery strategy.

Ringed Seals and Bearded Seals

Ringed seals (*Pusa hispida*) and bearded seals (*Erignathus barbatus*) — the primary prey of polar bears — are also highly dependent on sea ice. Circumpolar in distribution, they are found in Ontario during ice-free periods along the Hudson Bay and James Bay coasts and in large river estuaries where they use boat docks, gravel bars and shorelines to "haul-out" and rest. During the winter, adult ringed seals generally occupy stable land-fast ice, where they scrape breathing holes in the ice and build lairs under the snow to haul-out and give birth.

The distributions of ringed and bearded seals are likely driven by food availability and ice conditions, both of which are expected to be affected by climate change. Human hunting and predation by polar bears are likely the main causes of mortality among bearded and ringed seals, although the latter are also incidentally preyed upon by killer whales and walruses. Current population estimates are unavailable for the ringed and bearded seals found in Ontario, and neither species is listed as at risk.

Walruses

Walruses (*Odobenus rosmarus*) have a discontinuous arctic and subarctic distribution with distinct Atlantic and Pacific subspecies. In Canada, there are four populations of the Atlantic walrus, the most southern of which is the South and East Hudson Bay population. This population's size and structure are poorly understood but believed to number in the low hundreds and, therefore, the population is vulnerable to disturbances and small increases in hunting effort. Between July and October, approximately a few hundred animals of this population haul-out along the Ontario coast of Hudson Bay on shoals near Cape Henrietta Maria (see Figure 2.9.1). These shoals may provide a refuge for walruses, since Cree hunters in the area do not have a strong tradition of walrus hunting, unlike hunters from Nunavut and northern Quebec on Hudson Bay.

Walruses have a low reproductive rate, narrow diet of bottom-dwelling prey and restricted seasonal distribution, making the species vulnerable to environmental perturbations. Other threats, such as contaminant uptake, industrial development (e.g., commercial fishing, mineral exploration), and noise disturbance are comparatively minor. Moreover, because sea ice does not seem to critically affect walrus populations, climate change is expected to affect walruses only indirectly. First, a warming climate could expand the range of northern hunters, allowing them to increase their hunting pressure on walruses. Second, a reduction in the amount and duration of ice cover could increase arctic access and predation by killer whales and force walruses to seek refuge on terrestrial sites, further increasing exposure to human hunting and polar bear predation.

In 2006, the federal Committee on the Status of Endangered Wildlife in Canada (COSEWIC) reported that the Atlantic walrus "is near to qualifying for threatened status and requires an effective plan to manage hunting." Yet, no management plans are currently in place to protect the species from its greatest threat. Moreover, current regulations on hunting walruses in Canada (and trading walrus parts internationally) offer very limited protection, and it is unknown whether the few hunting quotas that have been set are sufficient to prevent over-hunting. While COSEWIC has identified the Atlantic walrus as a species of special concern, the Atlantic walrus has not yet been listed under *SARA* (or Ontario's *ESA*).

Beluga Whales

In an attempt to increase Ontarians' awareness and appreciation for the province's wild marine mammals, MNR has tweeted online that "beluga whales live in Ontario (and not just at Marine Land)." The Western Hudson Bay population of beluga whales (*Delphinapterus leucas*) — another circumpolar species — does indeed spend its summers primarily off the arctic coast of Ontario and Manitoba. When sea ice has broken up or disappeared, belugas of this population return after mating at sea and move along the Ontario coast in small groups, entering the estuaries of large rivers, perhaps to moult, feed, calve or avoid predators.

Aerial surveys conducted in summer 2004 estimated the Western Hudson Bay population to be between 57,000 and 76,000 belugas. More than 7,000 were estimated to occur along the Ontario coast of Hudson Bay. Potential sources of mortality to the Western Hudson Bay population include predation by killer whales and polar bears (which often prey on belugas entrapped in ice), increased shipping, and future hydroelectric development. However, the most significant threat is likely hunting. Even though there is no known beluga hunt in Ontario, the Western Hudson Bay population is heavily hunted in parts of its range (i.e., by western Hudson Bay and southeast Baffin communities). In 2004, COSEWIC identified the Western Hudson Bay population of belugas as a species of special concern due to the unknown consequences of hunting on this little-studied population. The beluga has not yet been listed under *SARA* and, therefore, is afforded federal protection only under the *Fisheries Act*. Ontario lists beluga whales under the *ESA* as a species of special concern, and the Minister of Natural Resources is currently required to ensure that a management plan for the species is prepared by June 30, 2013.

ECO COMMENT

Although Ontario's marine mammals live far from public sight, these magnificent animals make a unique contribution to the biodiversity and natural heritage of the province. As such, it is our obligation to safeguard their future. Unfortunately, marine mammals that inhabit or visit Ontario's marine coast face numerous threats, particularly as a result of a warming climate. Climate change will have profound effects on arctic and sub-arctic mammals; some of these changes, such as the expanding range of the killer whale, may be unpredictable and transformative. (For more discussion on ecosystem restructuring, see Chapter 2.1 of this Part of this Annual Report).

The potential for climate change to alter Ontario's northern ecosystems (see Part 3.1 of the ECO's 2009/2010 Annual Report) underscores the need for provincial — as well as national and global — progress in reducing greenhouse gas emissions (see the ECO's 2011 Annual Greenhouse Gas Progress Report). Sadly, because climate change is already occurring — and will continue even if worldwide greenhouse gas emissions were eliminated today — the Ontario government has no power to protect marine mammals from this threat. Recognizing this uncontrollable limitation, Ontario must champion the minimization of threats that are within human control, particularly hunting and habitat loss. Indeed, expected and unexpected ecosystem changes underline the importance of Polar Bear Provincial Park and other habitat protection efforts in reducing threats to Ontario's polar bears.

In 2011, the ECO observed that government response statements to recovery strategies for endangered and threatened species were generally weak, vague and inadequate (see Part 3.2

of the ECO's 2010/2011 Annual Report). The ECO looks forward to reviewing the government's response statement for polar bears and hopes, as the ECO has urged before, that it is robust, effective, defensible, and clearly articulates the actions the government will and will not take to protect and recover this threatened species. The ECO also expects MNR to comply with the *ESA* and ensure that a management plan for belugas is prepared by June 2013.

For ministry comments, please see Appendix C.

2.10 | Where's the Fire? Fire Management Planning for Provincial Parks and Conservation Reserves

Fire is an important ecological process fundamental to maintaining and restoring ecological integrity throughout Ontario's forests and grasslands. For example, fire disturbances create seedbeds, reduce competition, rejuvenate soils by releasing nutrients, and trigger seed release and vegetative reproduction. Natural fire patterns can also maintain a significant proportion of forest cover in young, vigorous stands that are less susceptible to blowdown, disease and insect damage.

Since the 1920s, however, the provincial government has implemented increasingly effective fire suppression programs and techniques. The reduction in fire disturbance in the last century has caused insect infestations, poor regeneration, the degradation of wildlife habitat and shifts in species composition, resulting in ecosystem conditions that no longer characterize the forest, savannah or grassland conditions of Ontario before modern intervention. Furthermore, the significant accumulation of biomass (fuel-load) caused by the long-term suppression of forest fires could increase the risk of intense, devastating fires that can threaten lives, property, neighbouring lands, and natural and cultural features.

Many ecosystems within Ontario's protected areas (provincial parks and conservation reserves) require fire disturbance for renewal and ecological health. According to the Ministry of Natural Resources (MNR), unless these areas are exposed to fire in the coming decades, many of Ontario's protected areas will cease to represent the natural heritage they were designed to protect.

Fire Management in Ontario's Provincial Parks

Recognizing this concern, over the past decade MNR has developed several policies and strategies related to fire management, including the Forest Fire Management Strategy for Ontario (the "Strategy"; see pages 75-79 of the ECO's 2004/2005 Annual Report). This 2004 Strategy divides the province into six Fire Management Zones based on common management objectives, land use, fire load and forest ecology. One of these zones — the Parks Zone — is comprised of 10 of Ontario's largest provincial parks, as well as Pukaskwa National Park. MNR explains that it created the zone because "fire is under-represented in the ecosystems of these parks and the future ecological integrity of the landscapes under park protection requires a progressive and responsible fire management effort."

The Strategy directs MNR, subject to available park resources, to develop fire management plans for each park in the Parks Zone. Where an approved park fire management plan does not yet exist, the Strategy also provides broad-brush direction on how to manage fire in each park in the Parks Zone. For example, for Killarney Provincial Park, the Strategy directs that fires will generally receive "full response" (i.e., suppression) and sustained action until extinguished. By contrast, for Polar Bear Provincial Park, MNR is directed to monitor fire to determine the response required. Provincial parks not included in the Parks Zone are to be managed for fire as directed in their respective park management plans or, in the absence of a park management plan, the fire strategy for the surrounding Fire Management Zone.

In 2004, MNR also released its Fire Management Policy for Provincial Parks and Conservation Reserves (the "Policy"), the goal of which is "to advance the management of fire in provincial parks and conservation reserves to restore and maintain the ecological integrity of Ontario's natural heritage represented within these areas, while preventing personal injury, value loss and social disruption associated with forest fires." MNR indicated that the Policy would be implemented by then-unwritten Fire Management Planning Guidelines for Provincial Parks and Conservation Reserves, which would direct the process of fire management planning, including: the development of fire management objectives for all protected areas; the incorporation of fire management direction in relevant planning documents, as appropriate; and the preparation of fire management plans, if appropriate.

The Fire Management Planning Guideline for Provincial Parks and Conservation Reserves

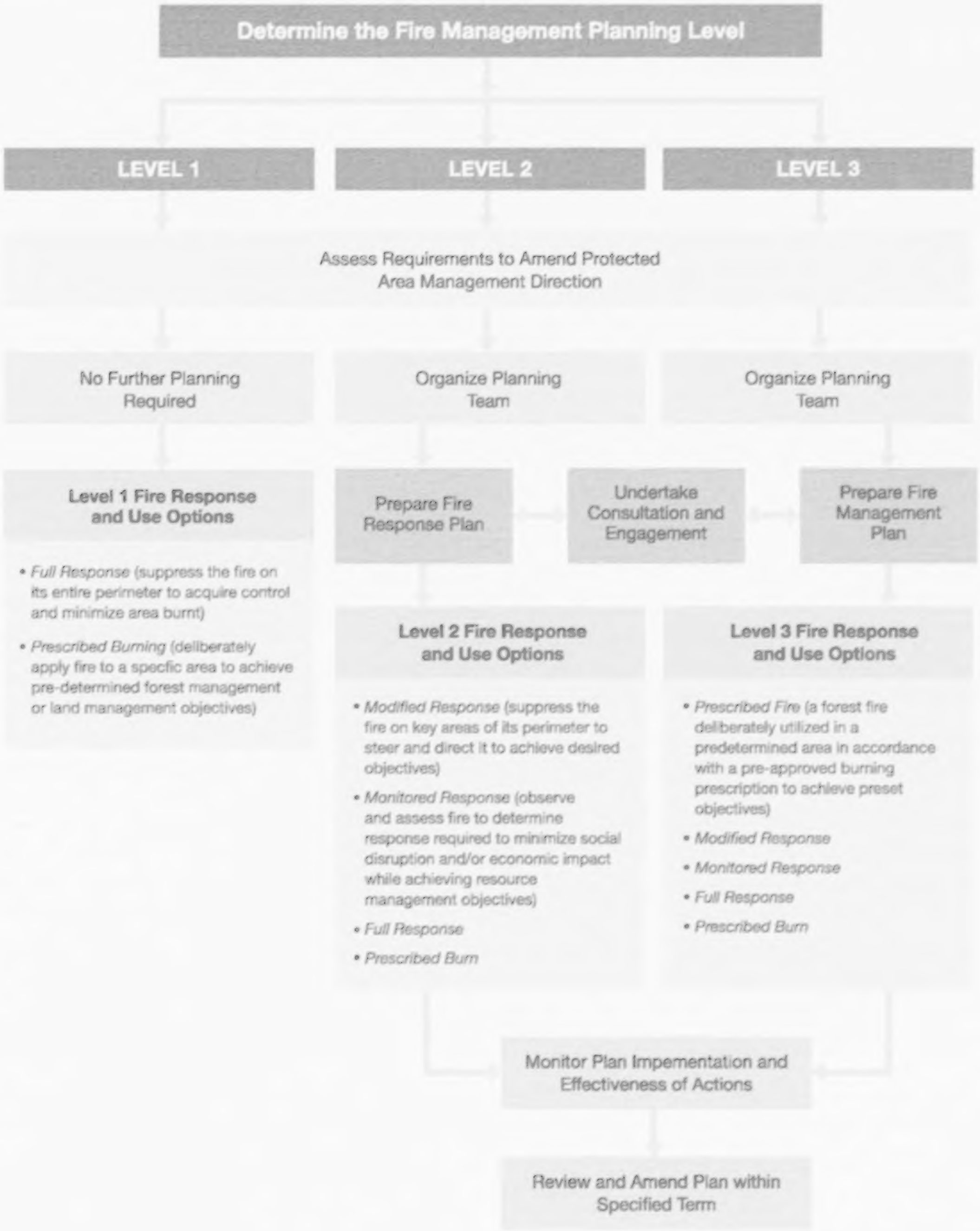
In July 2011, nearly seven years after approving the Fire Management Policy for Provincial Parks and Conservation Reserves, MNR approved the guideline needed to implement it. The purpose of the Fire Management Planning Guideline for Provincial Parks and Conservation Reserves (the "Guideline") is to assist MNR staff in fire management planning for protected areas, including the development of fire response plans, fire management plans, and protected area management directions (i.e., management plans or statements). The Guideline aims to achieve the ecological benefits of fire while ensuring protection of life, property and values from the adverse effects of fire.

To assist MNR staff with assessing the type of fire management appropriate for a protected area and to outline the planning requirements to implement it, the Guideline contains:

- information on the underlying provincial legislative and policy framework;
- a description of the options available for fire response (i.e., full, modified and monitored) and fire use (i.e., prescribed fire and prescribed burning) (for definitions of these terms, see Figure 2.10.1);
- information on the co-ordination and process of fire management planning (see Figure 2.10.1);
- criteria for determining the appropriate fire management planning level (e.g., Level 1, Level 2 or Level 3; see Figure 2.10.1);
- guidance on incorporating fire management direction into protected area management plans and statements; and
- detailed direction and templates for the preparation of fire response and fire management plans.

ECO COMMENT

The ECO applauds MNR for clearly acknowledging the importance of fire in restoring and maintaining the ecological health of ecosystems in Ontario's protected areas, and for providing


Determine the Fire Management Planning Level
LEVEL 1
LEVEL 2
LEVEL 3
Assess Requirements to Amend Protected Area Management Direction
No Further Planning Required
Organize Planning Team
Organize Planning Team
Level 1 Fire Response and Use Options
Prepare Fire Response Plan
Undertake Consultation and Engagement
Prepare Fire Management Plan
Level 2 Fire Response and Use Options
Level 3 Fire Response and Use Options
Monitor Plan Impementation and Effectiveness of Actions
Review and Amend Plan within Specified Term

Level 1 Fire Response and Use Options

- *Full Response* (suppress the fire on its entire perimeter to acquire control and minimize area burnt)
- *Prescribed Burning* (deliberately apply fire to a specfic area to achieve pre-determined forest management or land management objectives)

Level 2 Fire Response and Use Options

- *Modified Response* (suppress the fire on key areas of its perimeter to steer and direct it to achieve desired objectives)
- *Monitored Response* (observe and assess fire to determine response required to minimize social disruption and/or economic impact while achieving resource management objectives)
- *Full Response*
- *Prescribed Burn*

Level 3 Fire Response and Use Options

- *Prescribed Fire* (a forest fire deliberately utilized in a predetermined area in accordance with a pre-approved burning prescription to achieve preset objectives)
- *Modified Response*
- *Monitored Response*
- *Full Response*
- *Prescribed Burn*

Figure 2.10.1.
Overview of MNR's fire management planning process for protected areas (Adapted from the Fire Management Planning Guideline for Provincial Parks and Conservation Reserves, Ministry of Natural Resources 2011).

Photo Credit: MNR

detailed guidance for the development of fire management directions. The Guideline's templates, schematics, tables, examples of fire response and fire management plans, and assignment of responsibilities should provide an easy-to-follow path for MNR staff when navigating the fire management planning process. According to MNR, the ministry's broader success in developing fire management direction for protected areas has been hampered by lack of policy direction, absence of guidelines to support planning, lack of communication between MNR branches, and confusion over roles and responsibilities. The ECO believes this new Guideline should ease the planning process, clarify planning responsibilities, improve transparency and consistency, and increase the number of protected areas with fire response plans, fire management plans or fire management content in their management direction. In other words, except for lack of resources, there is no reason for further delay in the development of parks' fire management directions.

When the ECO previously reviewed MNR's only completed fire management plan — the Quetico Provincial Park Forest Fire Management Plan (see Section 4.15 of the Supplement to the ECO's 2009/2010 Annual Report) — the ECO noted that the plan lacked clarity and precision, and that its vague language offered little predictability of the plan's outcomes. The ECO expects that the new Guideline will help MNR develop clear, unambiguous fire response and fire management plans that articulate the fire management goals and objectives of a protected area, and the specific responses and uses necessary to achieve them.

The ECO cautions, however, that to offset MNR's history of fire suppression, fire management plans must include prescribed fires and burns as specified actions; fire management plans that fail to aggressively promote fire use will be ineffective at breaking MNR's habit of repressing this ecologically important disturbance, and will continue to allow the alteration and disruption of forest health. The ECO is encouraged by the Guideline's repeated references to ecological integrity, particularly MNR's suggestion that a goal statement for a protected area's fire management plan may be "to restore fire as an integral ecosystem process for sustaining and restoring ecological integrity while ensuring the prevention of value loss, personal injury, economic and social disruption." The ECO hopes this translates into fire response and management plans that prioritize the maintenance and restoration of ecological integrity and that clearly indicate how this goal will be achieved. Moreover, the ECO is pleased that MNR's guidance directs staff to assess projected changes to a protected area's fire regime due to a changing climate, and hopes that this information is thoroughly factored into future plans to improve their ability to preserve the ecological integrity of Ontario's protected areas.

Even though the 2004 Forest Fire Management Strategy directed that fire management plans are to be developed for each park in the Parks Zone (subject to available park resources), over eight years later only one of the eleven parks in the zone has a completed plan. Without park-specific plans, fire management direction for the other ten parks is broad and not tailored to each park's individual ecology, function and landscape. For example, although there may be an excellent opportunity to use prescribed fire in the wilderness portion of Algonquin Provincial Park, the current fire response for Algonquin — as described in the Forest Fire Management Strategy for Ontario — is to generally suppress fire until extinguished. The ECO again urges MNR to develop forest fire management plans for the remaining parks, and post these plans on the Environmental Registry for public comment.

RECOMMENDATION 4

The ECO recommends that MNR promptly consult the public and finalize all outstanding fire management plans for provincial parks.

For a more detailed review of this decision, please refer to Section 1.13 of the Supplement to this Annual Report. For ministry comments, please see Appendix C.

2.10.1. DEADLINES FOR PREPARING MANAGEMENT DIRECTION FOR PROTECTED AREAS REMOVED

The 2012 budget bill — Bill 55, the *Strong Action for Ontario Act (Budget Measures), 2012* — made a number of changes to legislation administered by MNR, including the act related to protected areas management, the *Provincial Parks and Conservation Reserves Act, 2006* (*PPCRA*). The budget bill removed the *PPCRA*'s requirement that MNR prepare management direction (i.e., a management plan or statement) by September 4, 2012 for existing provincial parks and conservation reserves. The bill also removed the requirement that MNR prepare management direction for future protected areas within five years of their creation. The ECO is disappointed in these amendments, as without legislated deadlines, there is little assurance that MNR will prepare management directions for protected areas promptly.

2.11 | Revenge of the Weeds

Nature's Weeds vs Human Needs

Just about everyone knows intuitively what a "weed" is: a weed is a plant you *don't* want, growing in a place where it replaces or harms plants that you *do* want. In agriculture, weeds have always been a major problem, as they compete with crops for all of the basics — space, water, nutrients and sunlight — often to the point where yields are drastically reduced or crop failure results.

While weeds are a problem for farmers, for nature they are a solution. Many of the plants we know as weeds can alternatively be viewed as nature's first responders when an ecosystem has been disturbed. They are like the first agents of repair, parachuting (sometimes literally, as in dandelion seeds) into areas that have been devastated by fire, flood, disease or human activity. They grow rapidly, making use of all the freed-up nutrients and taking advantage of the reduced competition. They stabilize the soil, re-establish habitat for wildlife (which in turn add nutrient-rich feces to the soil), add their own organic matter to the soil, and even penetrate deep into the sub-soil, breaking it up and bringing nutrients to the upper levels, where they are made available to succeeding generations of plants.

So it seems that the typical weed in a farmer's field is just trying to do its job, which is to begin the long, multi-stage process of re-establishing the diverse ecosystem the farmer uprooted in the first place. Unfortunately, if farmers are to be successful in growing the large amounts of food required to feed growing human populations, they cannot allow that process to unfold as it would in nature. Hence, the need for weed control is as old as agriculture itself.

The Evolution of Weed Control

Farmers used to control weeds mainly through tillage and hand-weeding. Ploughs overturned the soil, burying weeds where they were converted into beneficial organic matter. Hand-weeding or hoeing is effective but extremely laborious. Other weed-control methods, such as cover crops (plants that out-compete weeds but are compatible with the main crop), mulches (which smother weeds), fire, and the use of mechanical devices to flatten and kill the weeds, have been developed and refined over the centuries. However, in Ontario, as in most of the developed world, the application of chemical herbicides has been the principal method used by farmers since the middle of the last century.

During this time, herbicides have provided farmers with a very cost-effective solution for weeds. In combination with inorganic fertilizers, herbicides have increased agricultural productivity and reduced labour costs. These benefits have been augmented by the development over the past couple of decades of genetically modified (GM) plants engineered to be tolerant of a family of herbicides based on a chemical called *glyphosate*. The powerful combination of an effective herbicide with a crop resistant to its effects has proven to be extremely popular with farmers worldwide, who are able to use the herbicide whenever necessary to control weeds, without fear of damaging their crop. The result has been a huge increase in the application of glyphosate to agricultural soils.

From an environmental perspective, concerns regarding herbicide use have always centred around their potential impacts on non-target organisms. Herbicides can leave the site of application in many ways: as direct runoff; during erosion; and carried by the wind when applied as a spray or, for some herbicides, when they volatilize (turn into a gas). All of the above can result in damage to non-target crops, domestic animals, pollinating and other beneficial insects, and wildlife. These chemicals can also pollute water in ponds, streams and ditches, creating threats for fish, aquatic plants and animals, and any other creature that drinks the water (including humans).

Recently, some specific concerns have arisen regarding glyphosate-based herbicides. In fact, emerging issues associated with the use of glyphosate raise significant questions with respect to the sustainability of the existing weed-management paradigm.

Glyphosate

The Early Glyphosate Success Story

When glyphosate (the active ingredient in many broad spectrum herbicides) was introduced in the late 1970s, it was marketed as a "green" herbicide. Its unique mode of action — disrupting the production of a particular enzyme necessary for plant growth — results in the death of the plant and its roots, making regeneration impossible. Because animals do not make use of this enzyme, the environmental risks of using glyphosate-based products have been considered low compared to previously developed herbicides. In addition, glyphosate binds tightly to soils and degrades fairly rapidly, reducing the risk of run-off and limiting its uptake by non-target plants.

With the development in the 1990s of GM soybeans that are resistant to glyphosate, farmers could apply the herbicide whenever necessary to control weeds, as it did not affect their crop. This allowed farmers to reduce or even eliminate the use of other herbicides that were often considered to be more dangerous than glyphosate to non-target organisms. It also allowed them to more easily move to no-till or other conservation tillage systems, because glyphosate can replace tillage as the main method of weed control. Conservation tillage has a number of important environmental benefits: it minimizes soil erosion, conserves fuel, and reduces organic matter loss.

All of these advantages made glyphosate the herbicide of choice for the majority of North American farmers, and resulted in significant environmental accolades, including the U.S. Presidential Award for Sustainable Development in 1996.

Weeds Fight Back: The Evolution of Glyphosate Resistance

Although manufacturers had initially declared that weeds were unlikely to ever develop a resistance to glyphosate, the first resistant weeds appeared in 1996, 20 years after the introduction of the herbicide. Twelve years later, they appeared in Ontario, where many farmers now consider them a significant problem. According to the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), increased use of this herbicide has resulted in greater natural selection pressure for the resistance trait.

Unfortunately, the rapid evolution and expansion of glyphosate-resistant weeds is unlikely to abate. As a result, the reduction in the use of other herbicides, originally a side-benefit of the glyphosate herbicides, may soon be history, as farmers are forced to add more and more other herbicides to their glyphosate applications. For example, a major chemical company has recently applied for approval in the United States of its line of GM plants that have been engineered to be tolerant of 2,4-D, one of the earliest herbicides, as well as glyphosate, as a way to combat the glyphosate resistance problem. If these new GM plants are approved in Canada, Ontario may see a lot more 2,4-D applied to agricultural fields in years to come.

Emerging Concerns Regarding Amphibians

Evolving weeds are not the only emerging problem related this herbicide. Over its almost 40-year history, many studies have tested the potential environmental impacts of glyphosate. The scientific weight of evidence over the decades has suggested that glyphosate is sufficiently benign at expected environmental exposure levels to make it safe for use as long as the manufacturer's directions are followed. However, more recently, studies on glyphosate's environmental impacts are somewhat mixed. One emerging concern relates to glyphosate's impacts on aquatic ecosystems and amphibians.

Many glyphosate formulations contain a surfactant called polyethoxylated tallowamine (POEA), which allows glyphosate to penetrate plant cuticles. Studies have demonstrated POEA both to exert ecotoxicity itself and to increase the ecotoxicity of glyphosate in a synergistic manner. It has long been known that amphibians are vulnerable to harm from glyphosate formulations containing POEA because of their very permeable skin and susceptibility to environmental contaminants. Several studies conducted in simulated natural environments over the past few years have suggested that these formulations could cause high rates of mortality among amphibians at fairly low concentrations.

Declines in amphibian populations are generally acknowledged as a serious threat to biodiversity and the environment in general. Of the 6,300 known species of amphibians worldwide, nearly one-third (32 per cent) are threatened or extinct and about 42 per cent are declining. In Ontario, of the 26 amphibian species and subspecies, five are listed as endangered and three as extirpated (no longer existing in the wild in Ontario) under the *Endangered Species Act, 2007* (see Part 4.2 of the ECO's 2008/2009 Annual Report).

Experts have hastened to point out that the exposure levels experienced by amphibians in research trials were much higher than would ordinarily occur in the field. This view is supported by recent research by the Canadian Forest Service, involving the collection of about 500 samples from surface waters in amphibian habitats in southern Ontario over a two-year period ending in 2006. None of the samples exceeded the Canadian Water Quality Guideline for glyphosate, which itself is less than one-tenth of the lowest concentration found to be harmful in the latest research. In fact, most of the ambient concentrations reported in the literature are in the low parts-per-billion (ppb) range, 100 to 1000 times less than the one part-per-million (ppm) level found to be lethal in the amphibian-glyphosate studies.

Reasons for concern may exist nonetheless. The few studies that have looked at the long-term impact of sub-lethal levels of glyphosate and other agricultural pesticides (either individually or in combination) on such things as amphibians' immune systems, as well as parasite-host and predator-prey relationships, are revealing new areas of potential concern. For instance, one study (which did not look at glyphosate specifically) has shown the possibility of synergistic effects between several different types of pesticides. While individual pesticides did not increase mortality in that study, mixtures of pesticides did, even at ambient concentrations of each chemical in the low ppb range.

Shifts in Soil Microbial Communities

A related area of concern has emerged over the past few years: shifts in soil microbial community structure. Soil microbes provide a host of important benefits, both to ecosystems and to agricultural production systems. These benefits include (but are not limited to): nutrient cycling; water retention and drought resistance; disease suppression; carbon sequestration; improved soil structure; flood control; improved water quality; and enhanced biodiversity. (For further discussion, see Part 6.2 of the ECO's 2010/2011 Annual Report.)

Although some studies suggested that glyphosate application (at recommended rates) does not negatively affect soil health, recent advances in technology are now allowing researchers to obtain a much more detailed understanding of what is happening underground, particularly in the rhizosphere (the soil region in close proximity to plant roots). Some of this work indicates that glyphosate does indeed have an impact on soil microbes. For example, studies have indicated that glyphosate, as a systemic herbicide, is taken up by the plant and then released from the roots directly into the rhizosphere, where the greatest concentrations of soil microbes are found. At least one recent study has associated glyphosate with increases in the number of disease-causing fungi and decreases in the numbers of naturally occurring microbes that fight these pathogens. Another study also found that for legumes, such as soybeans, the associated nitrogen-fixing microbes that supply much of the plant's nitrogen needs are reduced in number when glyphosate is present.

The Use and Regulation of Glyphosate in Ontario

In Ontario, the use of glyphosate-based herbicides has grown since the introduction of GM soy and corn, to the point where over 60 per cent of the province's soybeans and 55 per cent of its corn are GM glyphosate-tolerant varieties. Together, soybeans, corn and wheat crops account for 64 per cent of the province's crop land and 95 per cent of the glyphosate used in the province. In total, over two million kilograms of the glyphosate active ingredient was applied to Ontario farmlands in 2008.

The regulation of herbicide use in Canada is largely a federal responsibility, rather than provincial. The federal government is responsible for evaluating and registering all pesticides in Canada, based on a stringent, science-based review of the pesticide's risks. Ontario farmers can only use federally registered herbicides on their crops.

The provincial government, however, plays a key role with respect to education. OMAFRA produces and distributes guides that assist farmers in controlling weeds, such as The Guide to Weed Control (2012-13) and the Agronomy Guide for Field Crops (Chapter 12 — Weed Control). These guides promote an "integrated approach to weed management" that includes brief descriptions of: field scouting to assess weed types and distribution; crop rotations, which reduce weeds and allow for annual changes in the types of weed-control methods used; awareness of crop varieties and their characteristics; the use of cover crops to suppress weeds; care in the placement of fertilizers to avoid their uptake by weeds; and various tillage practices. However, despite a clear statement advocating these practices, the bulk of the information provided in these guides relates to the safe and effective use of herbicides.

To address glyphosate resistant weeds, OMAFRA is now recommending better glyphosate management, such as including non-GM glyphosate tolerant crops in annual rotations, using herbicides with other modes of action in "tank mixes" with glyphosate, and limiting the number of glyphosate applications per year.

Non-Chemical Approaches to Weed Control

One of the common misconceptions regarding non-chemical approaches to weed control is that they are not as "scientific" as the chemical approach. This, however, is not the case: modern non-chemical approaches are based firmly in the biological and ecological sciences. Moreover, education and understanding of this science is the key to adoption of these approaches by farmers. For example, an ecological understanding of weeds, as mentioned in the introduction, allows farmers to see them in a different light — as indicators of poor drainage, acidic or alkaline soils, nutrient imbalances, microbial imbalances or compacted soils. An ecological understanding of the role of weeds can also help explain why certain crop rotations work to control weeds, while others do not.

Yet, OMAFRA is doing little to further this understanding. For example, its Agronomy Guide for Field Crops briefly states that forages (such as grasses and legumes) "are known to reduce the population of annuals in the first year of the next crop, but annual weeds can be a problem when establishing forages." However, it does not provide any scientific context to explain this observation.

An ecological interpretation may be valuable for this example. Many fungi are beneficial "symbionts" with grasses and other forage species and, when dominant in soil microbial communities, may also suppress some annual weeds. This could explain the post-forage weed suppression. However, these beneficial fungi need plant-root hosts to survive and a field left bare over the winter will greatly reduce their numbers. Therefore, one control strategy (at least for some crops and many annual weeds) could be to manage crop rotations and cover crops in such a way as to ensure permanently high populations of these beneficial fungi in the soil. A farmer that understands these ecological relationships can take advantage of them through the judicious use of rotation and cover-cropping practices.

While there is already much sound science to support various non-chemical approaches to weed control, more research is needed. Further study into the understanding of soil organisms and the soil food web they comprise, combined with new soil diagnostic technologies that allow quick and relatively inexpensive DNA-based identification of microbial species, communities and functional groups, could open up a whole new era of smart, sustainable agriculture based on the principles of biology and soil ecology. With a more complete understanding of what is happening in the soil, it may be possible, for instance, to develop a range of reliable methods to enhance the microbial communities that suppress weeds or that help plants to out-compete them. This research direction could also lead to practical methods for soil-remediation treatments that farmers could use to follow up the application of glyphosate or other herbicides, minimizing any possible detrimental effects on soil organisms or broader ecosystems. Moreover, to that same end, reliable methods for measuring overall soil health are needed. OMAFRA's current project to adapt Cornell University's package of soil health assessment tools for use in Ontario (see page 112 of the ECO's 2010/2011 Annual Report) is a small but important step in that direction.

ECO COMMENT

The partnership of genetically modified crops and glyphosate herbicides has provided farmers with a convenient, effective and affordable way to manage weeds and, thus, optimize food production over the past two decades. In addition, this approach has had environmental benefits, such as an overall reduction in the use of pesticides and the increased adoption of beneficial conservation tillage practices, which in turn conserve water, reduce soil erosion, and decrease the use of fossil fuels on farms.

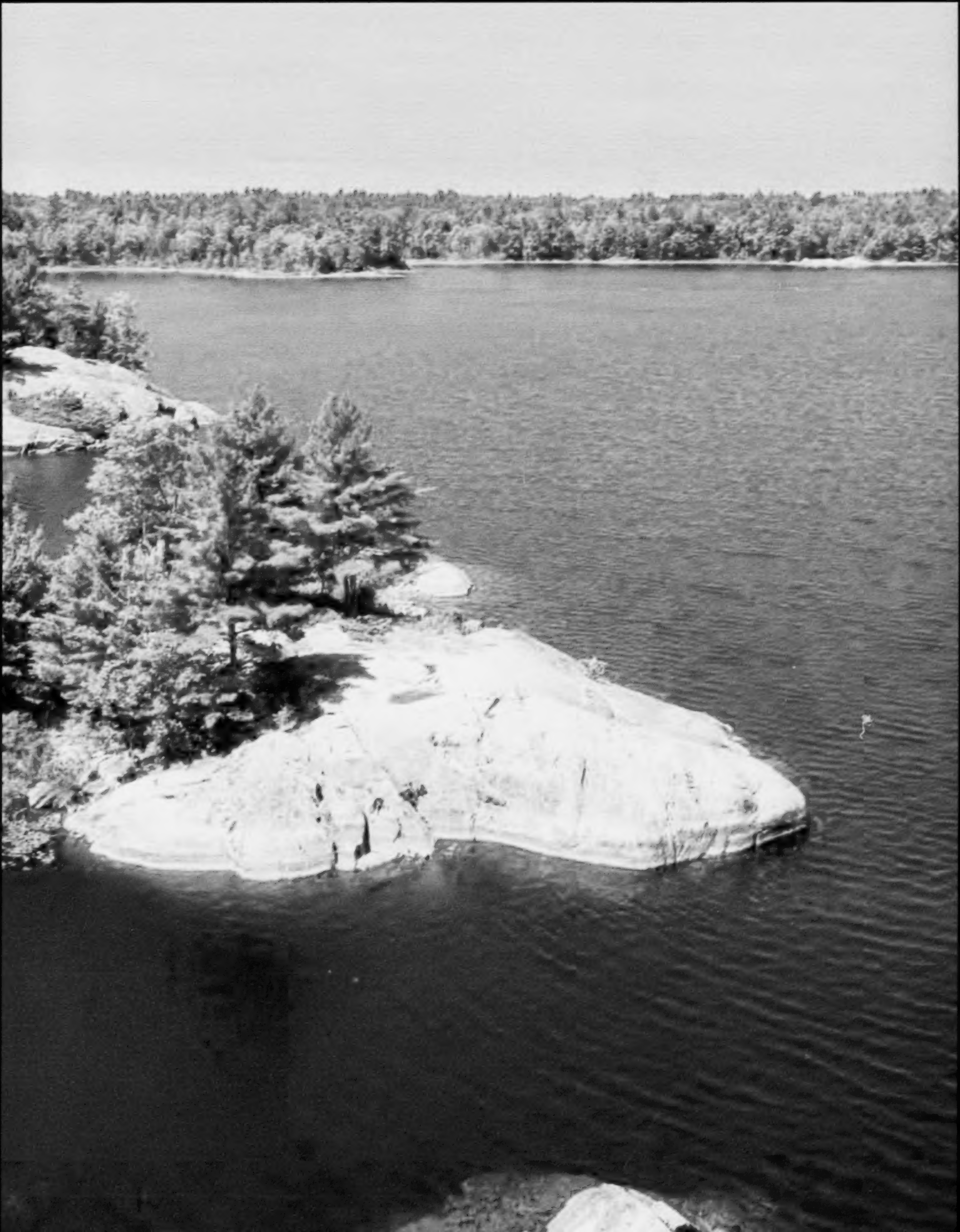
Despite these successes, the ECO is concerned about the long-term sustainability of this approach. Weeds will never stop evolving resistance to the chemicals designed to control them. Racing to keep ahead of the resistance response curve may work for a while, but does not appear to be the long-term answer to this problem. The proposed solutions currently being promoted include the re-introduction of other herbicides, such as 2,4-D. At the same time, the newest science on the possible impacts of low-level herbicide concentrations on amphibians and soil micro-organisms is worrisome.

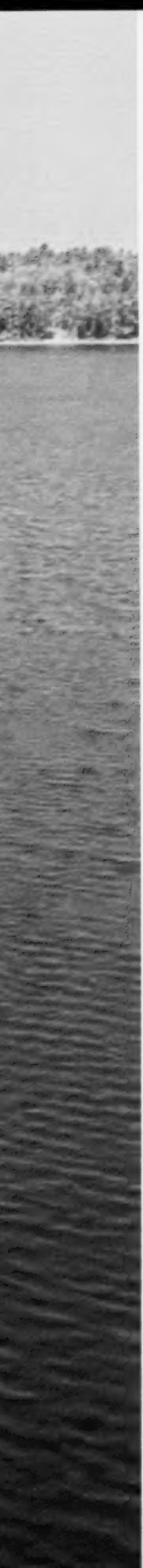
In 2009 the ECO praised the Ontario government for introducing a ban on the sale and use of pesticides for cosmetic purposes. The ECO noted that "reducing the volume of pesticides deposited in the environment is a worthy goal." In our 2010/2011 Annual Report (page 11), the ECO encouraged the province to build on successes like the cosmetic pesticide ban, which has already delivered improvements in water quality. Because of the fundamental importance of food production, however, the prudent approach to managing herbicide use in agriculture would not be to ban herbicides, but rather to aggressively identify and promote non-chemical alternatives, as well as to develop and implement scientific methods for preventing or remediating any ecological damage resulting from any herbicide use that is unavoidable. Unfortunately, promoting the use of more and/or different pesticides to combat resistant weeds now seems to be taking the province in the opposite — and wrong — direction. OMAFRA needs to do more than it is currently doing to lead the way towards greater sustainability of herbicide use in agriculture.

The ECO suggests that OMAFRA begin by adapting some of the tools already at its disposal. The Guide to Weed Control, as well as the sections on weed control in other OMAFRA publications, are very thin on the non-chemical approaches. These could be upgraded over the next few years by adding detailed information on the newest methods being developed in the areas of biological and organic agriculture; the ECO has observed very little of this in the current OMAFRA literature. This would help growers to better understand why and how management practices, like cover crops and crop rotations, work to suppress weeds. While the biological approach in no way constitutes a silver bullet for controlling weeds, the ECO believes that it is an emerging discipline with tremendous potential for minimizing the use of herbicides, as well as for remediating their potential negative impacts.

Similarly, the Environmental Farm Plan program could be enhanced to increase the focus on herbicide reduction and remediation, as well as on overall soil and ecosystem health. Finally, the OMAFRA project to evaluate the Cornell Soil Health Assessment tools could be given a much higher priority and level of resources, so that the monitoring of soil health could become a routine practice in Ontario.

For ministry comments, please see Appendix C.





CHAPTER 3.0

PLANNING ISSUES

Mining on Crown land, wind power projects, and growth in the Simcoe Sub-area are all examples of land use planning that can benefit Ontario's economy. But in promoting these initiatives, the provincial government must balance the economy against the environment. In this reporting year, the ECO reviewed several planning-related government decisions that demonstrate varying levels of success in achieving this balance.

In this Chapter, the ECO reviews the Ministry of Natural Resources' (MNR's) Guide for Crown Land Use Planning. This document explains how MNR will determine the use of Crown lands south of the Far North. The document establishes general policies for forest reserves, enhanced management areas and general use areas, replacing previous direction in Ontario's Living Legacy Land Use Strategy. We also look at MNR's land use decision on Wolf Lake, which highlights the current conflict between protected areas and mineral exploration.

While wind power is important to Ontario's long-term energy plan, there is some risk to bats and birds in the vicinity of wind turbines. The ECO reviews MNR's guidelines aimed at minimizing the potential negative effects of wind power development on birds and bats and their habitats.

The Greater Toronto Area has some of the worst traffic congestion in North America and the Government of Ontario has committed to prioritizing transit in land use planning initiatives. Getting people out of their cars and on public transit could reduce air pollution and the need to construct new or expanded highways and roads. In this Chapter, the ECO reviews the Ministry of Transportation's updated Transit-Supportive Guidelines, a document intended to provide municipalities with ideas, tools and best practices to design, develop and operate transit-oriented communities.

Provincial land use plans provide important direction to determine what and where activities are appropriate. In this Annual Report, the ECO highlights an *Environmental Bill of Rights, 1993* application requesting that the provincial government immediately address a number of deficiencies in the 10-year old Oak Ridges Moraine Conservation Plan and its implementation. We also discuss the amendments to the Growth Plan for the Greater Golden Horseshoe specific to the Simcoe Sub-area, a mostly rural area experiencing immense growth pressures.

3.1 | Guide for Crown Land Use Planning

The Ministry of Natural Resources (MNR) manages Ontario's Crown lands, which cover approximately 87 per cent of the province. In April 2011, MNR finalized a policy that consolidated and updated provincial direction for Crown land use planning, called the Guide for Crown Land Use Planning (the "Guide"). The Guide applies to all Crown land use planning conducted under the *Public Lands Act*, with the exception of the area known as the Far North. It replaces direction provided in A Land Use Planning System for Ontario's Natural Resources (1997) and portions of Ontario's Living Legacy Land Use Strategy (1999).

The overarching legislation — the *Public Lands Act* — gives authority to this Guide. Unfortunately, the Act itself has not undergone a thorough review in decades; as such, it does not explicitly reflect modern concepts in resource and environmental management, such as sustainability, biodiversity conservation and the maintenance of ecological integrity. The ECO recommended in our 2006/2007 Annual Report that MNR reform the *Public Lands Act* to create a planning system that provides the ministry with the necessary tools to better protect ecological values on all Crown lands.

In this new policy, MNR has divided the Guide into two main parts: the first part deals with land use planning in a general fashion, providing a recommended process for MNR staff to use; and

the second part provides provincial policies and supporting information for Crown land use designations. MNR will use the direction provided in this document when proposing new or amended land use plans and area-specific policies.

The Guide defines a Crown land use designation as "a land use classification with associated land use or management policies," established either through legislation, policy or planning processes. The Guide sets out the province's policy for several designations – namely, "forest reserves," "enhanced management areas" (EMAs) and "general use areas" – and provides a general framework for MNR staff to develop area-specific land use policies through local planning. Each designation defines the commercial activities, land and resource management

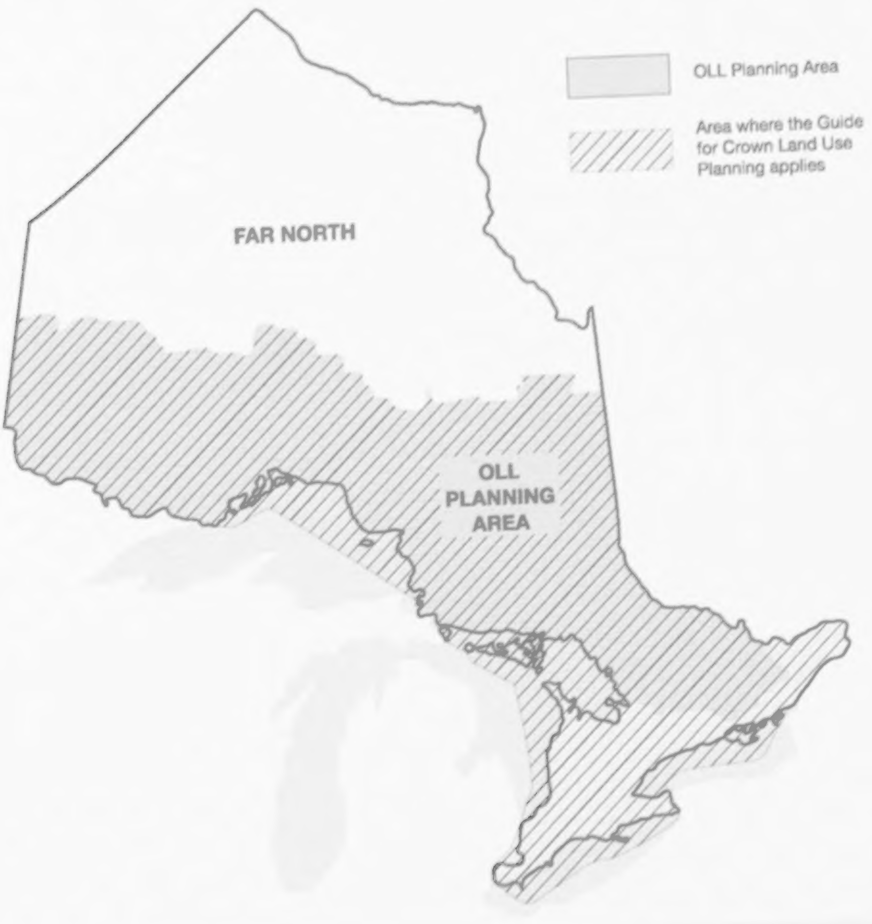


Figure 3.1.1.
Crown land use planning areas in Ontario: Far North planning area; Ontario's Living Legacy Land Use Strategy (OLL) planning area; and the area where the Guide for Crown Land Use Planning applies (Source: MNR, 2011).

directions, and recreation activities and facilities that are allowed or prohibited in an area. For provincial parks, conservation reserves, provincial wildlife areas and wilderness areas, the Guide summarizes other regulatory frameworks that are complementary to this process, such as the policy and planning system under the *Provincial Parks and Conservations Reserves Act, 2006 (PPCRA)*.

IMPLICATIONS OF THE DECISION

Consolidated and Consistent Direction

This Guide is a consolidation of a wide range of MNR policies. It should increase consistency of the Crown land use planning process, as well as plans and area-specific policies. MNR staff must apply the Guide's standards in all Crown land use planning carried out under the *Public Lands Act*. However, the Guide will be transitioned in and only applies to new land use planning projects after April 1, 2011, or will be triggered by future amendments to existing plans and area-specific policies. The Guide does not commit MNR to reviewing and updating existing plans and area-specific policies to ensure consistency with the new direction.

General Use Area

The Guide carries forward the "general use area" designation. The majority of Crown lands fall into this designation as it is the "default" designation where no other specific designations have been assigned. As the most flexible designation, these areas may permit various resource and recreation uses, but may also include restrictions when necessary. For example, policies can establish controls on access or protect Areas of Natural and Scientific Interest (ANSIs). When planning in this category, MNR must consider the implications of management actions on adjacent Crown land use designations, such as provincial parks.

Enhanced Management Areas

MNR defines an EMA as "a Crown land use designation that is used in Crown land use planning to provide more detailed land use direction in areas of special features or values, or where the land use policies for one of the EMA categories supports the land use intent for the area." The Guide includes (with some modifications) the five categories of EMAs previously created under Ontario's Living Legacy Land Use Strategy: natural heritage; recreation; remote access; fish and wildlife; and Great Lakes coastal areas. For example, natural heritage EMAs are intended to "provide partial protection to areas with significant natural values, while allowing a range of resource activities." Commercial timber harvesting, aggregate extraction, generation of electricity and road development are permitted in these areas, but may be subject to conditions to protect natural heritage values such as the location, size and timing of operation. The construction of new roads or trails in natural heritage EMAs must consider the potential impacts of access on values and MNR may establish conditions and restrictions.

Recreation EMAs can be applied to "areas with high recreation use or significant recreation values for activities such as angling, hunting, motorized and non-motorized trail use and canoeing." Commercial timber harvesting, mining, aggregate extraction, the generation of electricity and construction of service roads may be permitted. However, the Guide directs that these industrial activities should be planned in "a manner that supports the maintenance or enhancement of the area's remote recreation qualities," which is similar in intent to the direction for fish and wildlife EMAs. Additionally, it is worth noting that the Guide outlines that few, if any, new Great Lakes coastal areas EMAs will be established in the future.

Forest Reserves

Forest reserves were established under Ontario's Living Legacy Land Use Strategy as areas within proposed or recommended protected areas, but which had existing interest or tenure under the *Mining Act* or *Aggregate Resources Act*. In these areas, mining and aggregate extraction are allowed. However, the intent of this designation is that once a claim, lease or permit expires, the land would become a provincial park or conservation reserve. In 2005, MNR began to reduce the number and extent of forest reserves through Crown land use planning with a long-term objective to eliminate them entirely. The Guide reflects this intention to phase out forest reserves.

Mineral Exploration Trumps Other Land Uses

A significant change to Crown land use planning direction relates to mineral resources. The Guide states that previous Crown land use planning documents included "statements related to mineral exploration and development that may have overstated the extent to which these activities can be controlled through land use policies or processes." As the *Mining Act* establishes a free-entry system where most Crown land is openly available for exploration and development, except in some areas like provincial parks and conservation reserves, the Guide indicates that Crown land use planning documents cannot include restrictive policies "beyond what can be implemented by MNR," except when the Ministry of Northern Development and Mines (MNDM) is in agreement with the policy.

MNR must consider the potential for mineral development, existing mining lands and access in Crown land use planning, specifically when contemplating an interim or permanent withdrawal of mineral rights. In areas identified as having high mineral potential, land use decisions that "would preclude future mineral exploration and development will only be approved after consultation with MNDM." When undertaking Crown land use planning processes that are proposing the establishment of new protected areas or documenting the proposed transfer of lands, the Guide directs that MNR should recommend that MNDM enact mining withdrawal orders to prohibit the registration of new mining claims.

In our 2006/2007 Annual Report, the ECO reported on the disentanglement of overlapping mining claims and protected areas after MNR's release of Ontario's Living Legacy Land Use

Strategy. Mining claims were staked on 66 proposed protected areas either before the proposal or after the proposal but before MNR requested that MNDM remove the areas from eligibility. The ECO stated that "lands should be withdrawn from staking when MNR identifies them as candidates for protection" to ensure that this conflict does not occur again. Moreover, the ECO argued that the Minister of Natural Resources should in fact have the statutory authority to withdraw lands in such cases so as not to have to rely on MNDM for this aspect of Crown land management.

Wetland and ANSI Protection

On private lands, the Provincial Policy Statement, 2005 provides protection for identified natural values like Areas of Natural and Scientific Interest (ANSIs) and provincially significant wetlands (PSWs). Such areas are protected from development and site alteration. However, on Crown land, an ANSI or PSW is not a land use designation and does not "by itself confer any protection." The Guide directs MNR to consider and have regard to identified values in the Crown land use planning process, but it does not require any specific land use policies for these areas. Thus, some identified values like PSWs could have more protection on private land than on Crown land, unless they are included in a restrictive Crown land use designation, such as a provincial park, or specific protection policies are in place.

ECO COMMENT

MNR has the challenging duty of managing Ontario's Crown land on behalf of the public, as well as the government at large. The ministry's Guide for Crown Land Use Planning is a key component in planning and managing our vast Crown lands in a manner that weighs all interests. Unfortunately, many of the benefits that this planning direction could have are constrained by the outdated *Public Lands Act*. Unlike other planning legislation in Ontario, such as the *Planning Act* and the *PPCRA*, the *Public Lands Act* has not been open to public review or significantly revised in decades. The ECO believes that MNR should review the *Public Lands Act* with the aim of providing the necessary planning tools to carry out its mandated activities: the management of biodiversity, natural heritage and protected areas, resources, renewable energy and forests.

The conflict between mining and environmental protection on Crown land is a longstanding issue, on which the ECO has reported many times. The direction provided in the Guide perpetuates the management approach that mineral exploration trumps all other land uses, such as conservation, recreation or different kinds of commercial enterprises. The free-entry system established under the *Mining Act* is a dated concept and is at odds with modern values and land use planning principles. For example, it will be difficult for MNR to regulate any new protected areas without MNDM's express consent — regardless of the area's ecological significance or sensitivity. MNR should be empowered with the ability to comprehensively manage Crown lands, irrespective of the mineral potential or access for exploration or development.

For a more detailed review of this decision, please refer to Section 1.10 of the Supplement to this Annual Report. For ministry comments, please see Appendix C.

3.1.1. THIRD PARTIES CAN NOW MANAGE ONTARIO'S CROWN LAND

The 2012 budget bill — Bill 55, the *Strong Action for Ontario Act (Budget Measures), 2012* — made a number of changes to legislation administered by MNR, including the *Public Lands Act*. The Minister of Natural Resources now may delegate any of his or her powers — planning, management, enforcement — to a person or body prescribed by the regulations. The budget bill also established the groundwork for a permit-by-rule system that could allow individuals to self-register rather than be required to obtain a work permit to carry out an activity on public lands or shore lands from MNR. The ECO warns that the extent to which these budget bill amendments are applied going forward could fundamentally alter the management of Ontario's Crown land, potentially jeopardizing the active stewardship role that MNR has played across the province for decades.

3.1.2. WOLF LAKE OLD GROWTH FOREST SAGA CONTINUES

More than two decades have passed since Wolf Lake's old growth forest, northeast of Sudbury, was identified by the Ministry of Natural Resources (MNR) as warranting protection as it "may be the largest remaining contiguous old growth red pine dominated forest in Ontario." Over time, some of this area has been incorporated into Chiniguchi Waterway Provincial Park. However, for the remainder of the area, mining claims and leases continue to prevent its regulation as a protected area. The result is that the future of this ecologically significant site remains uncertain.

MNR is responsible for the management of Crown land, including the creation of protected areas. The Ministry of Northern Development and Mines (MNDM) is responsible for the management of mineral exploration and development. Both ministries are prescribed under the *Environmental Bill of Rights, 1993*, a central purpose of which is the "identification, protection and conservation of ecologically sensitive areas or processes." However, neither ministry has yet to fulfil the government's long-standing commitment to permanently protect Wolf Lake's old growth forest.

In our 2008/2009 Annual Report, the ECO recommended that MNR and MNDM develop the necessary regulatory mechanisms and policies to allow lands to be protected in cases in which environmentally significant sites and mineral tenure conflict. Neither ministry has acted upon this recommendation, resulting in the foreseeable public outcry when MNR proposed in June 2011 that Wolf Lake's land use designation be changed from its status as a "forest reserve," with the long-term objective to regulate the site as a protected area, to that of "general use," which allows both mineral development and commercial timber harvesting. In March 2012, MNR decided not to proceed with its proposal and to retain the forest reserve designation for Wolf Lake.

The ECO believes that the *Mining Act* should be amended to grant the Minister of Northern Development and Mines the authority to revoke or not to renew mining leases and claims that conflict with the public interest. At issue are public resources on Crown lands that the Government of Ontario is trusted with managing in the public interest. Without such a legal mechanism, to be used sparingly and judiciously, uncertainty exists because of conflicting land uses and the lack of mechanisms to resolve them. Such a tool would also then be available for government to address concerns raised by First Nations in their traditional territories.

To resolve conflicting land uses issues at Wolf Lake, the ECO in our 2008/2009 Annual Report urged MNDM to offer reasonable settlement to individuals and mineral exploration companies to surrender their mining claims or leases so that the lands could be withdrawn and regulated as a protected area. This has been done on several occasions in other parts of the province to resolve land use conflicts. The ECO believes that this short-term solution should be seriously considered until such time that the Government of Ontario makes the necessary changes to the *Mining Act* to enable revocation or the non-renewal of mining leases and claims.

3.2 | New Wind Power Rules to Protect Birds and Bats

Anyone seeking a renewable energy approval (REA) for certain wind, solar or bioenergy projects in Ontario must first identify and evaluate any natural heritage features — such as woodlands, wetlands and wildlife habitat — in and around the proposed project location. This process is called a "natural heritage assessment" (NHA). The assessment requires the applicant to explain how the project's potential negative effects on certain natural features would be alleviated if the project were to proceed.

For all land-based wind power facilities with a name plate capacity (i.e., total electricity generating capacity) of 50 kilowatts or more (i.e., Class 3 and 4 wind power projects), additional rules apply to address potential negative effects on birds, bats and their habitats during planning, construction and operation of those projects.
In this reporting year, the Ministry of Natural Resources (MNR) released two important documents to guide wind power proponents in completing the natural heritage assessment process in respect of birds and bats.

Natural Heritage Assessments for REAs

A natural heritage assessment for a REA application generally comprises the following steps (see Figure 3.2.1):

Records review — A desktop search and analysis of various records to identify any natural features that are known to be present within 120 metres of the proposed project location.

Site investigation — A physical investigation of air, land and water within 120 metres of the project location to identify any additional natural features that were not identified during the records review.

Evaluation of significance — An assessment of the "significance" of any natural features identified during the records review and/or site investigation.

Environmental impact study — A study that identifies the potential negative effects of the proposed renewable energy project on any "significant" natural features, and explains how those effects will be mitigated. Developing renewable energy projects in significant natural features or within their regulated setbacks (usually 120 metres) is prohibited, unless the proponent conducts an environmental impact study.

While the Ministry of the Environment (MOE) is the approval body for REAs, MNR is responsible for reviewing all natural heritage assessment reports and confirming whether they were conducted according to MNR criteria and procedures.

In 2011, MNR released the Natural Heritage Assessment Guide for Renewable Energy Projects, which establishes the criteria and procedures for completing natural heritage assessments for REAs. For a more detailed review of that decision, please refer to Section 1.12 of the Supplement to this Annual Report.

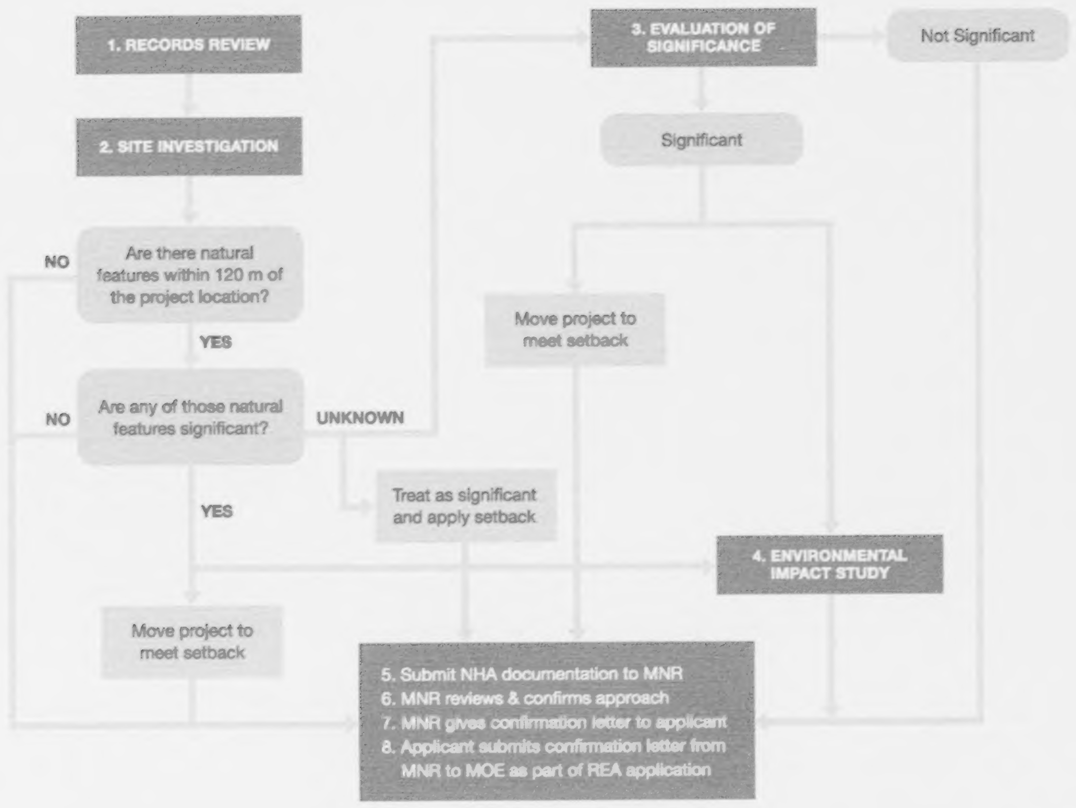

1. RECORDS REVIEW
2. SITE INVESTIGATION
Are there natural features within 120 m of the project location?
NO
YES
Are any of those natural features significant?
NO
UNKNOWN
YES
Treat as significant and apply setback
Move project to meet setback
3. EVALUATION OF SIGNIFICANCE
Not Significant
Significant
Move project to meet setback
4. ENVIRONMENTAL IMPACT STUDY
5. Submit NHA documentation to MNR
6. MNR reviews & confirms approach
7. MNR gives confirmation letter to applicant
8. Applicant submits confirmation letter from MNR to MOE as part of REA application

Figure 3.2.1.
Natural heritage assessment process for renewable energy approvals (Adapted from: the Ministry of Natural Resources' Natural Heritage Assessment Guide for Renewable Energy Projects, July 2011).

Wind Turbines, Birds and Bats

Harnessing wind as a renewable energy source is an important component of Ontario's long-term energy plan. However, one downside to using wind power is the risk of harm to wildlife in the vicinity of wind turbines; birds and bats are particularly susceptible.

Birds and Wind Turbines

Wind turbines are among the many human-caused sources of bird deaths. Studies suggest their contribution to total bird mortality is very small: less than 0.01 per cent of total bird deaths caused by anthropogenic sources. By contrast, buildings, power lines and cats are estimated to cause over 80 per cent of human-caused bird mortality (see Figure 3.2.2). The Ontario government has nevertheless identified a need for wind power proponents to be particularly mindful of potential effects on birds when planning, constructing and operating wind power projects.

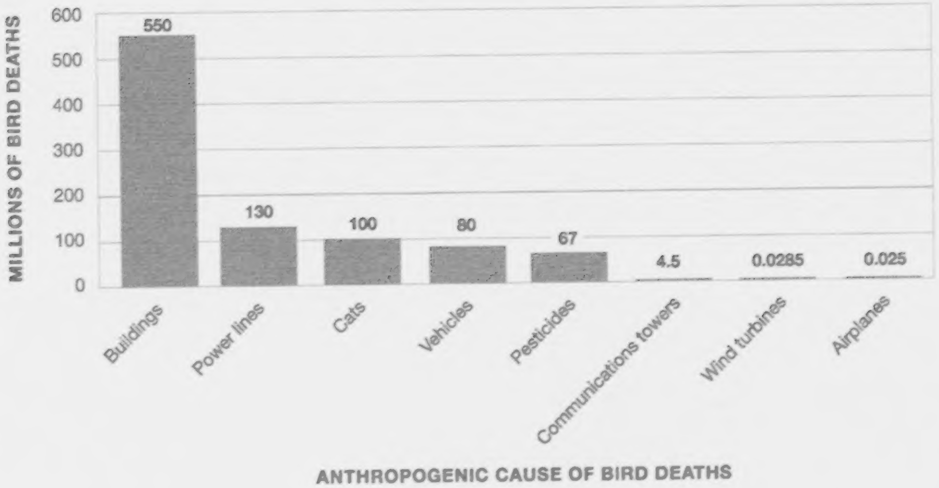


Figure 3.2.2.
Estimated annual bird mortality in the U.S. by some anthropogenic sources (Source data: Erickson, W.P., G.D. Johnson and D.P. Young, "A Summary and Comparison of Bird Mortality from Anthropogenic Causes with an Emphasis on Collisions," USDA Forest Service General Technical Report PSW-GTR-191, 2005).

Birds may be injured or killed in flight by colliding with wind turbine blades, towers and associated components, such as guy wires and maintenance vehicles, or they may suffer loss of feeding, breeding or migratory stopover habitat. Nocturnal species may also suffer physical exhaustion due to disorientation induced by turbine lighting. According to MNR, an average of 2.5 birds per turbine are killed each year in Ontario. MNR states that wind power projects at this mortality level "are not a sustainability concern for most of Ontario's bird populations."

Bats and Wind Turbines

The rapid growth of wind power development around the world has brought with it an unexpectedly high rate of bat fatalities at some wind energy sites. In Ontario, the mortality rate is estimated at 4–14 bats per turbine per year. Bats are not only at risk of injury or death from colliding with moving turbine blades, but they can suffer internal haemorrhaging ("barotrauma") from exposure to rapid changes in air pressure near the tips of spinning blades. Wind power projects may also cause habitat loss for bats if turbines are located near swarming, hibernation or roosting sites, or in migratory stopover areas.

Wind turbines are most dangerous for long-distance migratory bat species; approximately 75 per cent of documented bat fatalities at wind turbines in North America are migratory bats. An estimated ninety per cent of bat fatalities occur from mid-July through September, peaking during autumn migration.

Ontario is home to eight bat species. As of September 2012, none of Ontario's bats are listed as being at risk under the *Endangered Species Act, 2007.* However, in May 2012, Ontario's Committee on the Status of Species at Risk in Ontario (COSSARO) met to assess the status of four bat species believed to be at risk. Three of those species were assessed as endangered by a federal advisory body earlier in 2012, due to unprecedented mortality caused by "white nose syndrome" (see box). The outcomes of COSSARO's assessments have not yet been made public.

WHITE NOSE SYNDROME POSES DEVASTATING THREAT

Photo Credit: Marvin Moriarty, U.S. Fish and Wildlife Service

"White nose syndrome" has recently emerged as a significant threat to the very survival of many bat species in Ontario and across North America. The syndrome is a devastating and rapidly spreading condition characterized by white fungus that grows on infected bats while they hibernate. With a mortality rate approaching 100 per cent in some hibernacula (i.e., hibernation sites, such as caves and mines) and no known cure or treatment, white nose syndrome has been referred to as "the worst wildlife health crisis in memory."

The syndrome was first documented in 2006 in New York State. It was found in Ontario for the first time in March 2010, and confirmed at additional Ontario locations in 2011 and 2012. In January 2012, the U.S. Fish and Wildlife Service estimated that the disease had killed between 5.7 and 6.7 million bats in the eastern U.S. and Canada.

MNR has acknowledged that white nose syndrome "has the potential to devastate Ontario bat populations as it has done in the northeastern U.S." The ministry is monitoring sites where bats hibernate for signs of white nose syndrome, promoting practices to prevent the spread of the fungus, and working with other jurisdictions "to ensure a coordinated approach to monitoring and prevention" of the syndrome.

Special Requirements for Wind Power Projects to Consider Birds and Bats

Proponents of all Class 3 and 4 wind power projects must complete an extra step in the natural heritage assessment process: preparing "environmental effects monitoring plans" for birds and bats. Among other things, an environmental effects monitoring plan must establish programs for post-construction monitoring to identify negative environmental effects on birds and bats and their respective habitats.

Two guidelines released in this reporting year set out the criteria and procedures to be used by wind power applicants in conducting natural heritage assessments and preparing environmental effects monitoring plans for birds and bats. *Birds and Bird Habitats: Guidelines for Wind Power Projects* (the "Bird Guidelines") and *Bats and Bat Habitats: Guidelines for Wind Power Projects* (the "Bat Guidelines") define special criteria and procedures for:

- identifying and evaluating bird and bat habitat during the natural heritage assessment process;
- identifying potential negative effects on birds and bats and mitigation measures to address those effects; and
- undertaking post-construction monitoring of bird and bat mortality.

Some key elements common to both guidelines are discussed below.

Encouraging adherence to setbacks — The guidelines specifically encourage wind power applicants to consider applying setbacks to bird and bat habitat "as the first option." This would entail moving a proposed project location outside a 120-metre setback for any areas identified as bird or bat habitat.

Additionally, the Bat Guidelines prohibit the placement of wind turbines within 1,000 metres of bat hibernacula; the 120-metre setback for development must be applied from the edge of the 1,000-metre mark from hibernacula.

Mortality thresholds — Both guidelines establish thresholds beyond which mortality would be considered "significant," triggering mitigation action and/or additional monitoring.
For birds, significant mortality is defined as 14 birds/turbine/year at individual turbines or turbine groups (separate, specific thresholds are established for raptors). A "significant bird mortality event" occurs when mortality during a single mortality monitoring survey exceeds 10 or more birds at any one turbine, or 33 or more birds at multiple turbines.

The Bat Guidelines establish an annual mortality threshold of 10 bats/turbine/year. Unlike the bird mortality threshold, which is assessed on an individual turbine basis, the threshold for bats is averaged across the site.

Post-construction monitoring — All Class 3 and 4 wind power projects must conduct three years of post-construction bird and bat monitoring, including regular mortality surveys around turbines, from May 1 to October 31 (November 30 for raptors) annually.

Post-construction mitigation — If post-construction monitoring identifies significant annual bird mortality, mitigation is required. At turbines located within 120 metres of bird significant wildlife habitat (SWH), the proponent must immediately initiate mitigation measures, including operational mitigation, such as periodic shut-down of certain turbines and/or blade feathering (i.e., altering the slant of the turbine blades to slow them down). At turbines located outside the 120-metre setback, proponents must conduct two years of scoped monitoring; operational mitigation may be required if significant mortality persists.

If significant bat mortality is identified through post-construction monitoring, site-wide operational mitigation is required from July 15 — September 30 annually (i.e., from the summer swarming/breeding period through the early fall migration for those species that do not hibernate here) for the duration of the project. Operational mitigation consists of changing the wind turbine cut-in speed to 5.5 metres/second, or feathering the wind turbine blades below that speed, so that turbine blades do not rotate in low wind speeds when bats are most active.

Contingency plans – For birds, contingency plans must provide for mitigation and monitoring measures to be implemented immediately in the case of a significant mortality event. For bats, contingency mitigation and monitoring measures must be implemented if that operational mitigation is not sufficient to reduce significant bat mortality.

Data and information sharing – All monitoring data for birds and bats will be submitted to the Wind Energy Bird and Bat Monitoring Database. This database is intended to "facilitate an improved understanding of the effects of wind turbines on birds and bats, and to allow for greater consistency in assessment of wind power effects."

IMPLICATIONS OF THE DECISIONS

With these two guidelines, the Ontario government has ensured that wind power projects will not be approved without according particular consideration to their effects on birds, bats and their habitats. The guidelines should assist proponents in locating, constructing and operating wind power facilities to minimize potential harm to birds and bats. Moreover, the guidelines should allow for the collection of useful information about bird and bat mortality and disturbance due to wind turbines, as well as the effectiveness of particular mitigation actions. However, some shortcomings in the guidelines may expose bats and birds to continued vulnerability, as described below.

The most at-risk bat species are the least protected – Migratory bat species are the primary victims of wind turbine deaths, yet the Bat Guidelines focus on evaluating and protecting hibernacula and maternity colonies – used by non-migratory species – instead. MNR's rationale for excluding any evaluation of migratory stopover areas is that MNR does not have defined criteria for such an evaluation. In effect, the Bat Guidelines allow proponents to select wind power project locations without regard to potential bat migratory corridors in the vicinity.

No prohibition on development in Important Bird Areas (IBAs) – IBAs are areas of land or water that are identified, using internationally accepted standards, as supporting specific groups of birds (i.e., threatened species, large groups of birds, and birds restricted by range or habitat). The IBA Program in Canada, co-ordinated by a partnership of non-governmental organizations, is intended "to identify, conserve, and monitor a network of sites that provide essential habitat for Canada's bird populations." Ontario has 70 IBAs, including Long Point Peninsula and Marshes, Point Pelee, Wolfe Island and Wye Marsh, to name just a few. The Bird Guidelines note that the IBA sites in Ontario may contain a number of candidate bird significant wildlife habitats. MNR disregarded calls from numerous stakeholders to prohibit wind power development in IBAs.

No consideration of cumulative effects – Proposed wind power project sites are evaluated and approved on an individual basis, without regard for the potential cumulative effects on birds or bats due to other wind power projects nearby or other sources of bird and bat mortality.

ECO COMMENT

The ECO is pleased that the Ontario government is giving special consideration to birds and bats as wind power development increases across the province. The benefits of wind power are substantial, and these guidelines should help wind power proponents and MNR to minimize negative effects on birds, bats and their habitat.

Wind power has been demonized by some groups in Ontario. Vocal opponents cite a wide range of reasons, including effects on birds and bats, to challenge proposed wind farms in their communities. Opposition to wind power based on its impacts on birds is misguided, given the relatively low bird mortality rate at wind turbines compared to other threats (such as buildings, power lines and cats), and given its reduced impacts on wildlife compared to other forms of energy. However, the ECO believes that wind power projects should be required to give IBAs a wide berth. MNR itself has acknowledged that location is a key factor in preventing potential adverse effects on birds; it would make sense to avoid constructing wind power projects in the most sensitive locations.

Between wind turbines and white nose syndrome, every species of bat in Ontario is under increasing pressure. The ECO urges MNR to move quickly to develop criteria for identifying and evaluating bat migratory stopover areas and related habitat, and to publicly consult on the integration of those criteria into the Bat Guidelines. Given the importance of project site selection on minimizing potential effects to bats, and the fact that migratory species are most vulnerable to wind turbines, having criteria to identify and avoid developing wind energy in migratory stopover areas is essential. MNR should require that the wind power industry contribute funding (perhaps on the basis of total nameplate capacity) for evaluating migratory bat stopover areas, as well as other independent research on bats and the impacts of wind power on bats.

The ECO is troubled by MNR's omission of any requirements for cumulative effects consideration in both guidelines. Even if the effects of any one wind power project are relatively low, failing to provide a mechanism for considering the cumulative effects of multiple wind power projects in an area (as well as other sources of bird and bat mortality) could result in considerable mortality without necessarily triggering mitigation measures.

As more information and data about birds, bats and wind turbines are collected, and as wind power development continues to grow, the ECO urges MNR to carefully monitor and assess these guidelines — and in particular the mortality thresholds — to ensure they remain sufficiently protective of this important Ontario wildlife.

RECOMMENDATION 5

The ECO recommends that MOE and MNR prohibit wind power development in designated Important Bird Areas.

For more detailed reviews of these decisions, please refer to Sections 1.9 and 1.11 of the Supplement to this Annual Report. For ministry comments, please see Appendix C.

3.3 | Waiting for a Change: The Oak Ridges Moraine Conservation Plan

The Oak Ridges Moraine is often referred to as southern Ontario's "rain barrel." Its groundwater aquifers and headwater streams collect and provide baseflow to more than 30 major streams and rivers, and provide drinking water to many of the Greater Toronto Area's residents. The moraine spans the regions of Peel, York and Durham. Its woodlands, wetlands, grassland prairies, rivers and lakes support many plant and animal species, including endangered and threatened species such as redside dace, Jefferson salamander and butternut trees.

Ten years ago the government created the Oak Ridges Moraine Conservation Plan (2002) (ORMCP or the "Plan"), under the *Oak Ridges Moraine Conservation Act, 2001* (*ORMCA*), to protect this special geological landform from impending urban development. The Plan's objectives speak to the long-term protection of this geological feature and its environment, including:

- protecting its ecological and hydrological integrity;
- permitting only land and resource uses that maintain, improve or restore the ecological and hydrological functions of the moraine; and
- ensuring that the moraine is maintained as a continuous natural landform.

In September 2011, the Oak Ridges Moraine Foundation, a non-regulatory governing body meant to complement the goals of the ORMCP, submitted an application under the *Environmental Bill of Rights, 1993* (*EBR*) requesting a review of the Plan and other legislation, regulations and policies to address issues related to the implementation of the Plan, as well as newly identified threats to the integrity of the moraine. Originally, the government had committed to review the Plan in 2012, but this date was changed to 2015 so that it could be reviewed along with the Greenbelt Plan and the Niagara Escarpment Plan. The applicants requested that the government address these new threats to the moraine and deficiencies in the Plan's delivery before the scheduled 2015 review.

The applicants cited the results from the Oak Ridges Moraine Foundation's Measuring Success on the Oak Ridges Moraine Project, which revealed weaknesses in the Plan and its implementation, as the basis for this application. While the ideals behind the Plan are excellent, the applicants are concerned that the moraine is not being protected to the extent that had been envisioned. The ECO forwarded this application to the Ministry of Municipal Affairs and Housing (MMAH), the Ministry of the Environment (MOE) and the Ministry of Natural Resources (MNR) for consideration. In November 2011, all three ministries denied the application for review.

Site Alteration and Tree Conservation

Under the *ORMCA*, the Minister of Municipal Affairs and Housing has the authority to require some municipalities to pass by-laws under the *Municipal Act, 2001* regulating: tree removal (such as prohibiting or regulating the destruction or injury of trees); and site alteration (such as prohibiting or regulating the placing or dumping of fill, the removal of topsoil and the alteration of the grade of the land). These activities have the potential to seriously degrade ecosystems, e.g., large-scale tree cutting can destroy and degrade habitat.

As noted by the applicants, in the last ten years, MMAH has not taken action to ensure that these by-laws are implemented nor provided any standards or instructions to municipalities on what such by-laws might contain. The applicants recommended that MMAH should require all municipalities on the moraine to pass site alteration and tree conservation by-laws; moreover, they suggested that MMAH, MOE and MNR provide municipalities with by-law technical standards to meet the requirements of the Plan.

Importation of Fill

The applicants cautioned that "large-scale fill importation has become an especially controversial and complicated land use issue in some parts of the Oak Ridges Moraine." The applicants claimed that fill from new development in the Greater Toronto Area, which may contain some contaminants that could have long-term impacts on water resources, is being dumped on the moraine in depleted sand and gravel pits. The applicants observed that there is a lack of clear standards and procedures for controlling this type of fill importation.

The current regulatory framework for managing fill provides clear direction when soil is determined to be contaminated; it is regulated as "waste" under the *Environmental Protection Act* (*EPA*) and must be disposed of in proper waste management facilities. However, the direction is somewhat ambiguous when fill is semi-contaminated or "compromised" — when it has levels of contaminants, such as petroleum and metals, that are too low to be classified as waste but too high for residential development sites. Compromised soil is managed under various pieces of legislation, such as the *Aggregate Resources Act* (*ARA*) when fill is placed in aggregate pits or quarries as part of site rehabilitation. When converting an industrial lot or brownfield site to a residential development, such as a condominium, developers must either remove or remediate contaminated or compromised soil.

The applicants requested that MMAH, MOE and MNR provide guidance on how to assess imported fill to ensure it is clean and does not negatively affect the ecological integrity of the moraine. The applicants also requested that the government review the approval process under the *EPA* and the *ARA* to ensure that fill importation into depleted sand and gravel pits meets the environmental standards of the Plan.

Transportation, Infrastructure and Utilities

The Plan states that transportation, infrastructure and other utility works will not be approved in certain areas of the moraine unless the need for the project has been demonstrated and there is no reasonable alternative. The applicants stated that the Plan's criteria for demonstrating "need" and "reasonable alternative" are vague, nebulous and arguably provide an automatic approval for these types of activities. Since the Plan restricts most major urban development, the applicants predict that transportation, infrastructure and utilities will likely represent the "largest element of surface and sub-surface disruption and land use change" on the moraine. The applicants requested that MMAH and MOE provide direction to all municipal and other government agencies undertaking transportation, infrastructure and utility works on how to address "need" and "reasonable alternative," as required in the Plan.

Much transportation and utility infrastructure is approved under Class Environmental Assessments (Class EAs) under the *Environmental Assessment Act*. The applicants stated that there is no protocol requiring agencies to consider the policies of the ORMCP during the Class EA process. The applicants requested that MOE amend all relevant Class EA procedures and other guidance materials to require consideration of the Plan's policies during the environmental assessment approval process.

Water Management

The Plan contains many policies aimed at protecting moraine water resources, such as the requirements for stormwater management plans and watershed plans prior to the approval of major developments. However, the applicants stated that there are deficiencies in other water management legislation and regulations that could limit the Plan's ability to maintain or improve water quality, preserve water storage and protect the related health of hydrological features found on the moraine. For example, the applicants noted that water-taking permits on, or adjacent to, the moraine are not required to meet the Plan's objectives or consider cumulative impacts. The applicants requested that O. Reg. 387/04 (Water Taking), under the *Ontario Water Resources Act* (*OWRA*), be amended to require that all water-taking permit applications on, or adjacent to, the moraine describe how the activity will meet the requirements of the Plan and consider cumulative impacts.

Monitoring

Under the Plan, the provincial government, in consultation with municipalities, is required to identify performance indicators for monitoring the effectiveness of the Plan and establish a monitoring network in partnership with stakeholders. In our 2001/2002 Annual Report, the ECO recommended that MMAH, MNR and MOE (then the Ministry of the Environment and Energy) begin planning and implementing the promised systems for monitoring and evaluating the Plan. The applicants stated that the province has not fulfilled its commitments to identify performance indicators and targets; moreover, unless these commitments are met, the government will not have the tools or information necessary to conduct a meaningful evaluation of the Plan in 2015. The applicants requested that the Ontario government "revisit the commitment to provide effective performance indicators and targets and provide clear guidance and scheduling as to when this will be achieved in time for the 2015 review, including development of a monitoring network."

Other Requests

The applicants made a number of additional requests related to: transitional provisions; auditing; ongoing support for stewardship, land securement, education and research; and sustainable lifestyle and livelihood (permitted uses).

MINISTRY RESPONSE

MMAH, MOE and MNR turned down the application for review. To assess the application, MMAH led an inter-ministry team that included MOE, MNR, the Ministry of Infrastructure, the Ministry of Agriculture, Food and Rural Affairs, and the Ministry of Transportation (MTO). MMAH stated that

> *The applicants' request to review some of the policies of the ORMCP in advance of the 2015 review of the ORMCP, Greenbelt Plan and Niagara Escarpment Plan does*

> *not fully recognize the interconnections of each of these three plans, subsequent provincial initiatives such as the Greater Golden Horseshoe Growth Plan and source water protection, as the benefits of undertaking a review comprehensively.*

MMAH further stated that "since the release of the *ORMCA* in 2001 and the Plan in 2002, the government has put in place a comprehensive approach to growth and manage resources in this geography. Collectively these support a land use planning system that promotes sustainable communities."

For the full text of the ministry decision, see our website at www.eco.on.ca.

ECO COMMENT

The Oak Ridges Moraine is one of southern Ontario's most important landforms. Like the Niagara Escarpment, the moraine requires special consideration to ensure its long-term conservation. The ECO is disappointed that the ministries have delayed considering some of the applicants' concerns until the 2015 review of the ORMCP. The ECO acknowledges that various regional plans are interconnected and deserve an integrated and comprehensive review. That said, there is no reason why MMAH, MOE and MNR need to wait to address many of the issues cited by the applicants. Many of these matters deal with the implementation of the Plan, not the Plan itself, and warrant immediate attention. For example, after a decade, MMAH has failed to monitor the Plan's implementation and develop performance indicators to assess the Plan's effectiveness in protecting the land and waters of the moraine.

Furthermore, while a combined regional plan review may be reasonable, the ECO cautions that such a review should not erode the legal protections provided for the moraine in the *ORMCA* and its Plan. This review must not result in a shifting to a lowest common denominator of protection, but rather should lead to more enlightened provincial planning that recognizes and protects special landscapes. The applicants raised valid concerns regarding the Plan's implementation that could be addressed before the 2015 review. Many of these concerns have also been raised by the ECO in past annual reports.

First, to deliver on-the-ground results, technical and local rules need to conform to and reflect the protective philosophy of the Plan; otherwise, good intentions will remain only good intentions. For example, in our 2005/2006 Annual Report, the ECO recommended that MMAH, MTO, MNR and MOE develop technical guidance regarding municipal roads in the moraine. While MTO has developed some technical guidance, supplementary guidance for regional and local roads is still outstanding. The ECO again urges these ministries to clarify how "need" and "reasonable alternatives" for infrastructure projects are to be determined under the Plan and to ensure that relevant class environmental assessment guidance documents conform to the intentions of the ORMCP.

Second, the ECO believes that MMAH should utilize its powers under the *ORMCA* to ensure that all municipalities on the moraine enact tree conservation and site alteration by-laws; the ministry should also provide guidance on what these by-laws should contain. Tree cutting and site alteration can degrade the moraine's natural habitat and water resources, and municipal by-laws are an important mechanism used to regulate these activities. Not all municipalities on the moraine have passed these by-laws and, where they do exist, no assessment has been conducted to determine their consistency or effectiveness in protecting the moraine.

Third, to ensure protection of the moraine's hydrological integrity — one of the main objectives of the Plan — MOE should require that permits to take water conform to the Plan. MOE should also consider the cumulative effects of water taking from the moraine when issuing all permits to take water. Currently MOE may require a cumulative impact assessment in certain cases, such as low water conditions. The ECO also reiterates a recommendation made to MMAH in our 2010/2011 Annual Report that the ORMCP be amended to ensure that moraine groundwater is protected from development outside of the moraine.

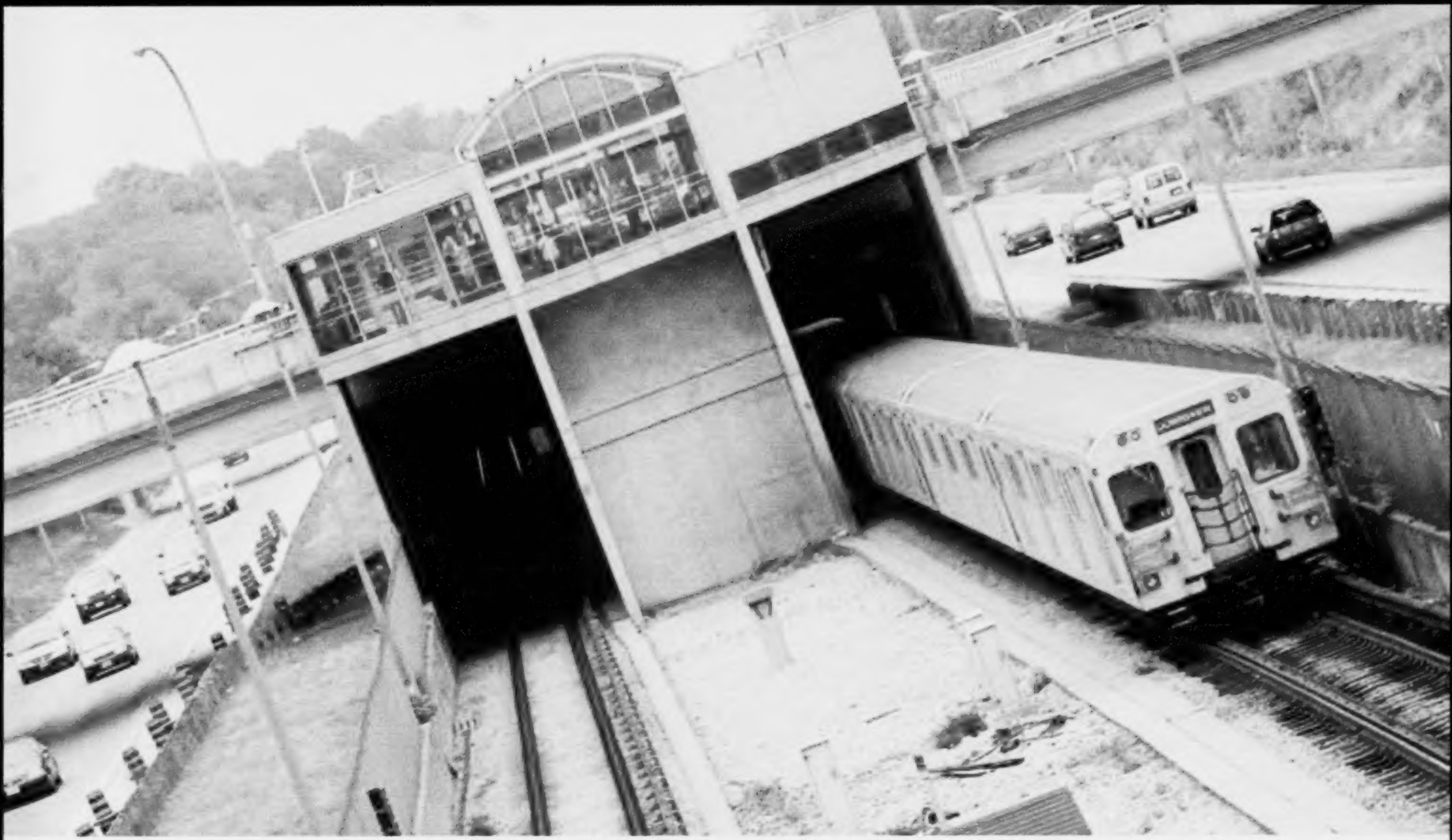
Finally, the importation of commercial fill into the Oak Ridges Moraine, and other areas surrounding the Greater Toronto Area, has become a contentious issue because the rules guiding its management are confusing and sometimes ineffective. With the increase in construction of high-density residential developments, the need for sites to deposit fill from brownfield re-development is also increasing. Often former aggregate pits in rural areas become the final destination of this "compromised" fill, which is not suitable for certain land uses but not considered waste. The ECO previously cautioned that it will be critical to test commercial fill imported to rehabilitated aggregate sites to prevent unintended site contamination (for more information, see the Supplement to the ECO's 2008/2009 Annual Report). In April 2012, MOE released a draft document, Soil Management — A Guide for Best Management Practices, for review without posting it on the Environmental Registry as is required by the *Environmental Bill of Rights, 1993*, but advised the ECO that a more complete version will be posted on Environmental Registry in the future. The best management practices contain recommendations, not requirements, for the management of excess soils generated from redevelopment and construction projects and, therefore, provide limited clarity. To bring clarity to the rules, the ECO believes that MOE and MNR should conduct a policy review of the management and disposal of "compromised" earth material and that the ministries' Statement of Environmental Values should guide such a review. Any new "compromised" soil management approach should be precautionary, consider cumulative effects, and be designed to protect aquatic and terrestrial ecosystems.

For a more detailed review of this application, please refer to Section 2.1.13 of the Supplement to this Annual Report. For ministry comments, please see Appendix C.

3.4 | Planning, Creating and Sustaining Transit-Oriented Communities

When all the costs are considered, public transit (including subways, buses, streetcars, light rail and commuter rail) offers a more effective and efficient way of moving people than the private automobile. Transit is more space-efficient, energy-efficient, cost-effective, pedestrian-friendly, safe, and environmentally friendly. Recognizing this, the Government of Ontario has stated a commitment to prioritize transit and promote it in a number of ways. This includes:

- streamlining the environmental assessment process for public transit projects (see Part 5.1 of the ECO's 2008/2009 Annual Report);



- developing and supporting regional transportation plans (e.g., Metrolinx's The Big Move; see page 33 of the ECO's 2011 Annual Greenhouse Gas Progress Report) and growth plans (e.g., the Growth Plan for the Greater Golden Horseshoe; see pages 28-35 of the ECO's 2006/2007 Annual Report); and
- investing more than $10.8 billion since 2003 to support transit.

The Ministry of Transportation (MTO) also promotes transit by providing guidance on land use and transportation planning to municipalities. In 1992 the government published the Transit-Supportive Land Use Planning Guidelines to help municipalities plan and develop practices that support the provision and use of public transit. This document contains 40 guidelines grouped around three major themes: (1) land use planning; (2) the physical design of transit routes; and (3) the planning process and incentives to encourage transit use.

The world has changed in the 20 years since the Guidelines were published; municipalities' planning practices have changed, the provincial legislative and policy framework has evolved, Ontario's demographics and priorities have shifted, and new technologies have altered the way Ontarians live. Recognizing this new reality, in January 2012, MTO updated and expanded the Guidelines — now titled the Transit-Supportive Guidelines (the "Guidelines") — to "provide municipalities with ideas, tools and best practices to consider transportation and land use planning simultaneously in their local decision making in order to develop more transit-supportive communities." The updated document contains 54 guidelines and more than 500 strategies, including those that show:

- how provincial policies and programs can assist municipalities in supporting transit;
- emerging trends in transit-supportive land use planning;

- best practices from other jurisdictions that outline effective ways to support transit;
- land use practices that support transit, urban design elements that can make transit more attractive, and best practices that can contribute to increased ridership; and
- resources available to transit and land use planning practitioners.

Each guideline is supplemented by background information, descriptive figures and web links to recommended resources, including appended case studies and guidelines, plans, standards, policies, manuals and strategies from other jurisdictions. The final chapter in the document provides an overview of the implementation tools that can be used to achieve the document's principles and guidelines, as well as strategies (e.g., density and height bonuses, parking levies and development charges) to promote and finance transit initiatives.

Table 3.4.1. Examples of Guidelines and Strategies Included in MTO's Transit-Supportive Guidelines (2012)

GUIDELINE	STRATEGY	COMMUNITY SCALE(S)	SUGGESTED PLANNING SCALE(S)
1.1.1. Settlement areas should be planned with an overall structure that is supportive of transit. This includes identifying places suitable for growth through the use of urban boundaries to promote intensification and linking built form and land use patterns to transit infrastructure.	#2. Official plans should designate urban boundaries around settlement areas in order to concentrate development and avoid uncontrolled rural and suburban sprawl.	All community scales	Municipal scale (town or city-wide) and regional scale
	#10. Avoid pre-servicing areas outside of the existing urban boundary with municipal sewer and water services, as this will lead to pressure for new development.	All community scales	Municipal scale (town or city-wide) and regional scale
2.2.2. Streets should be designed with sidewalks and crossings that are comfortable to use, with frequent intersections and crossing points that provide multiple routing options and amenities that enhance the experience of walking to and from transit.	#13. At signalized intersections with high pedestrian traffic, consider the use of a pedestrian priority phase to enable simultaneous pedestrian crossings in all directions.	Large communities (150,000-500,000 people) and big cities (>500,000 people)	Site and building scale
3.1.4. Minimize the impacts of travel delays by implementing transit priority measures, more efficient boarding procedures, and computer-aided dispatching.	#6. Low-floor vehicles can reduce dwell times and improve travel times by enabling passengers to board more quickly.	All community scales	None given

IMPLICATIONS OF THE DECISION

The Guidelines Reflect a More Comprehensive and Modernized Approach

The 1992 Guidelines focused on land use planning, the physical design of transit systems, the planning process, and incentives to create a more transit-supportive community. The 2012 Guidelines have been expanded and updated to reflect new policy frameworks, emerging ideas, and lessons from a generation of transit-supportive communities. While many of the principles and guidelines from the previous document have been retained, the updated Guidelines now include an expanded focus on transit service planning and operations to grow ridership through a range of tools, management approaches and technologies that did not exist 20 years ago. In particular, the 2012 Guidelines include new or expanded guidelines and strategies to help municipalities:

- Increase ridership by improving the transit user's experience (e.g., by providing real-time arrival times via text messages, making wireless Internet available, installing passenger-activated radiant heating at remote transit stations).
- Increase transit's accessibility to disabled people, as required under *Ontario's Accessibility for Ontarians with Disabilities Act, 2005*.
- Promote cycling and enhance cyclists' access to transit (e.g., by designing transit stations to include bicycle parking and storage, air pumps, repair stands and other bike-friendly amenities).
- Reduce the environmental impacts of transit systems (e.g., by installing solar panels and permeable paving at transit stations).
- Monitor and evaluate the performance of transit systems.

The Guidelines and Strategies are Suggestions, Not Requirements

Municipalities' official plans and decisions must be consistent with Ontario's Provincial Policy Statement, 2005 (PPS), which contains several transit-supportive planning policies, including: integrating transportation and land use considerations; identifying growth areas, nodes and corridors; and emphasizing intensification. According to MTO, the intention of the 2012 Guidelines is to assist municipalities in implementing the policies and objectives of the PPS, as well as those of the Growth Plan for the Greater Golden Horseshoe and the Growth Plan for Northern Ontario, where applicable. The ministry notes, however, that the Guidelines are not a statement of provincial policy and are not intended to assess compliance with the PPS.

ECO COMMENT

MTO's updated Transit-Supportive Guidelines provide clear and comprehensive guidelines, strategies, figures and supplementary resources to help municipalities design, develop and operate transit-oriented communities. Moreover, the time was right for an update; since the original document's publication, technology, planning practices, and the age and composition of Ontario's population have all changed.

What has not changed, however — despite MTO's 1992 guidance document and other provincial policy tools — is that Ontario's transportation system continues to be automobile-oriented, with transit provided largely as a marginal service for those without automobile access. Subdivisions are still built with meandering, pedestrian-unfriendly streets that require a car trip to buy a loaf of bread; the Greater Toronto Area continues to suffer from some of the worst traffic congestion in North America (costing billions of dollars to the economy); and in many Ontario municipalities, less than 15 per cent of trips are taken by public transit. While the guidelines and strategies offered by MTO may be progressive, they are still only suggestions to be considered and implemented at a municipality's discretion. To shift society to a transit-oriented system, transformative thinking and action is needed on transit operations, transportation planning, and — as the foundation for a transit-supportive environment — land use planning. To effect real change, municipalities need more prescriptive guidance.

If the government is serious about compelling municipalities to build transit-oriented communities, it can do more than just suggest best practices. It can actually strengthen the PPS and require that municipal official plans be consistent with many of the strategies in the Guidelines. The ECO looks forward to reviewing how the government improves transit-supportive land use planning requirements in the PPS, which is currently under review.

Furthermore, municipalities' various design and operating standards, which were developed to manage conventional growth patterns, should also be revised to support transit-supportive planning and design. The Guidelines suggest that alternative transit-supportive development standards could be incorporated into official plan policies and could include: streetscape standards to encourage higher levels of walking/cycling; parking standards; building standards; and transportation-demand management requirements. MTO's assurance that it "will explore opportunities to work with municipalities in updating relevant standards and manuals" is heartening. However, as several Ontario municipalities have noted, this undertaking is critical to achieving the communities envisioned in MTO's Guidelines, and should be given priority within the Guidelines and the ministry.

Another concept that should have been given more weight in the Guidelines is road pricing. The ECO has noted before that putting a price on road use can motivate sustainable transport choices (transit, cycling, walking), finance public transit, and diminish traffic congestion, vehicle accidents, greenhouse gas emissions, air pollution, gasoline consumption and the need for expensive road expansion (see pages 18-22 of the ECO's 2010 Annual Greenhouse Gas Progress Report). While the Guidelines suggest several transportation-demand management strategies (e.g., increasing parking fees to reduce single-occupant vehicle use) and funding mechanisms (e.g., density and height bonuses) to support public transit, notably absent in these discussions is any mention of the benefits of road tolls, congestion charges and other forms of road pricing. The Guidelines' failure even to mention the success of road pricing in other jurisdictions, and explain how Ontario municipalities might initiate road pricing (or what support the province might provide), represents a curious and unfortunate oversight.

The ECO is pleased, however, to see guidelines and strategies that promote cycling, encourage environmental protection, and prompt municipalities to monitor and evaluate the performance of transit systems. The ECO urges MTO to follow its own guidance and use effective indicators (e.g., the car-transit modal split) to measure and evaluate the province's overall progress on increasing public transit use (see Chapter 6.4 of this Part of this Annual Report for more information on program evaluation; also see Chapter 6.3 of this Part of this Annual Report for the ECO's review of MTO's sustainability strategy).

Finally, the ECO is pleased that MTO's detailed decision notice indicates that the ministry carefully considered comments received during public consultation, and incorporated many of the suggestions into the final Guidelines. The result is a more complete and accurate document that exemplifies the value of consultation via the Environmental Registry.

For a more detailed review of this decision, please refer to Section 1.20 of the Supplement to this Annual Report.

3.5 | Growth Plan Amendments for the Simcoe Sub-area

Urban sprawl can inflict a host of environmental damages. Sprawl can destroy, alter and fragment ecosystems. It replaces productive agricultural lands and available greenspace with residential subdivisions, shopping plazas and roadways. It contributes to increased traffic congestion with the attendant air pollution such traffic brings. Furthermore, it causes increased, often excessive, stress on the quality and quantity of the water in local watersheds. To combat sprawl in southern Ontario, the government created the Greenbelt Plan under the *Greenbelt Act, 2005*, and the Growth Plan for the Greater Golden Horseshoe (2006) (the "Growth Plan") under the *Places to Grow Act, 2005.* The Greenbelt Plan and the Growth Plan are linked — the first identifies which lands should be shielded from development, and the second defines where population growth should occur. (For more information, see the ECO's 2004/2005 and 2006/2007 Annual Reports).

Since the Ontario government created this growth framework, an area called the Simcoe Sub-area (which includes the County of Simcoe and the cities of Barrie and Orillia) began to experience intense development pressure. In response, the Ontario Growth Secretariat, within the then Ministry of Energy and Infrastructure, defined a strategic vision for growth in the Simcoe Sub-area and amended the Growth Plan to provide specific direction on how much and where population and employment growth should occur in this area. While the Simcoe Sub-area contains some urban areas, such as Barrie, it is primarily rural with agricultural and natural lands such as forests and wetlands. A portion of the Simcoe Sub-area is located within the stressed Lake Simcoe watershed.

The Growth Plan requires municipalities in Simcoe County to use allocated population and employment growth targets (referred to as "forecasts" in the Growth Plan) for planning and managing growth. Under the Growth Plan, the Simcoe Sub-area's population is forecast to increase by 50 per cent to 667,000 people by 2031 from its 2011 population of 446,063 (Figure 3.5.1). Municipalities may also approve development in settlement areas to accommodate an additional 20,000 people, above the total growth forecast for the Simcoe Sub-area, under certain circumstances on a first-come, first-serve basis.

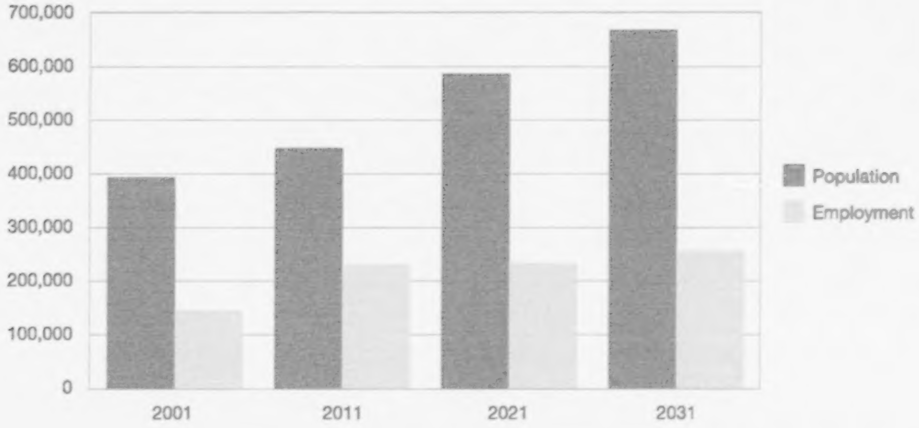


Figure 3.5.1.
Past and projected population and employment in the Simcoe Sub-area (Simcoe County, City of Barrie and City of Orillia), as identified in the amended Growth Plan (Source: Growth Secretariat, 2012 and Statistics Canada, 2011).

Alcona, Alliston, Barrie, Bradford, Collingwood, Midland/Penetanguishene and Orillia are designated as primary settlement areas in the Simcoe Sub-area. Within primary settlement areas, municipalities will: plan for intensification areas; plan and create complete communities; and ensure the development of urban form and public open spaces that support walking, cycling and transit. The Growth Plan amendment provides growth targets for each lower-tier municipality. Although the amendment does not specify growth targets for all primary settlement areas, it requires that Innisfil, Bradford West Gwillimbury and New Tecumseth direct a significant portion of population and employment growth to primary settlement areas. In Bradford West Gwillimbury, Innisfil and New Tecumseth, the Growth Plan forecasts suggest the population will increase by 80 per cent, 69 per cent, and 85 per cent, respectively, from 2011 to 2031. The Growth Plan also identifies employment areas and economic districts, including the Bradford West Gwillimbury strategic settlement employment area, the Innisfil Heights strategic settlement employment area, the Lake Simcoe Regional Airport economic employment district, and the Rama Road economic employment district.

The government has also committed to undertaking other crucial growth management initiatives in the Simcoe Sub-area at later, unspecified dates. These include:

- determining the location, boundaries and permitted uses for strategic settlement employment areas and economic employment districts;
- developing an infrastructure plan, including a strategy for water and wastewater;
- undertaking an area transportation study; and
- identifying intensification and density targets for Simcoe County.

In March 2012, the Ministry of Transportation began developing a Simcoe Area Multi-Modal Transportation Strategy, but the other initiatives are still forthcoming.

ECO COMMENT

The ECO has previously reported on the difficulties in reconciling provincial planning priorities designed to manage growth with those intended to protect ecosystems. The Growth Plan itself contains some laudable direction — for example, promoting more compact urban communities, moderating growth in rural communities, and encouraging the use of public transit. However, it also contains some policies of concern, such as directing growth to communities currently grappling with water supply and wastewater treatment issues (as identified in our 2006/2007 Annual Report). Unfortunately, the amendment for the Simcoe Sub-area does not rectify this problem. The amendment assigns population and employment growth to some smaller communities in the Simcoe Sub-area with limited water and wastewater capacity due to local groundwater or stream conditions. To accommodate population and employment targets, Simcoe County proposed that some of these communities be serviced via pipeline from existing and expanded water and wastewater facilities in neighbouring municipalities. For example, a proposed pipeline could collect wastewater from communities between Tottenham and Nottawasaga Bay, where the treated effluent would be disposed. Building big water pipe systems to support growth can be unsustainable in the long term, as it pushes communities to live beyond their watersheds' carrying capacity and natural limits.

The Growth Plan amendment also creates employment areas away from existing settlement areas. This is inconsistent with the intent of the Growth Plan itself and may actually increase urban sprawl and degrade the area's ecological health, which includes portions of the stressed Lake Simcoe watershed. Without sufficient public transit between employment and settlement areas, this could increase traffic congestion along the Highway 400 corridor, smaller highways and municipal roads.

It is troubling that the province allocated population and employment growth before completing transportation and infrastructure studies — initiatives that should inform which communities can service an increased population and which cannot. The ECO encourages the Ministry of Infrastructure to swiftly complete transportation and infrastructures studies and set high-density intensification targets for identified settlement areas in the Simcoe Sub-area.

For ministry comments, please see Appendix C.

CHAPTER 4.0

WATER ISSUES

Water is virtually synonymous with life. Almost all living things, from microbes to whales, depend on this essential resource. In strictly human terms, fresh, clean water is required for drinking, washing, agriculture, recreation, heating and cooling, along with many industrial processes.

Ontario is blessed with an abundant, and disproportionate, supply of fresh water. Nonetheless, various factors can affect local supplies of fresh water, including weather, pollution, and overuse of the water in a given watershed. Moreover, water supply and demand are both likely to be significantly affected in the future by climate change.

In this reporting year, the ECO looks at issues relating to both water supply and water quality. On the supply side, the Ministry of Natural Resources (MNR) published a revised Ontario Low Water Response Plan, designed to ensure provincial readiness for low water scenarios. The ECO assesses the potential effectiveness of this Plan. The ECO also looks at the Ministry of the Environment's (MOE's) Permit to Take Water (PTTW) Program again this year to assess whether the program has improved. The ECO evaluates the success of the program in several key areas, including: collection and use of water taking data; protection of natural ecosystem functions; water conservation; cumulative impacts; and transparency.

On the water-quality side, a 2011 decision by the Ministry of Municipal Affairs and Housing (MMAH) requiring mandatory septic system re-inspections is reviewed. Septic tanks contribute significant amounts of phosphorus to Ontario surface waters; periodic inspections of these systems could help stem this flow. Finally, the ECO reports on the surprising and disturbing results of an application for review, submitted by two Ontario citizens, of a sewage system Certificate of Approval issued by MOE.

4.1 | Preparing for Drought: Ontario's Low Water Response Plan

In Ontario, a summer of endless sunshine is typically seen as a welcome gift. However, long periods of no rain and hot temperatures can lead to dried-up streams, dusty soils, wilting crops and depleted aquifers. Severe low water conditions, compounded by high-volume water takings, can lead to social and economic stress for businesses, farmers and communities, as well as stress the integrity of aquatic ecosystems.

In the late 1990s, Ontario experienced two successive years of below-average rainfall and above-average temperatures that resulted in some of the driest conditions recorded in Ontario for decades. This prompted the province, in 2001, to develop an Ontario Low Water Response Plan ("OLWR Plan" or "Plan") to "ensure provincial preparedness, assist in co-ordination of provincial and local efforts, and support local response in the event of a drought."

In 2007, Ontario experienced another summer of extremely low water conditions that exposed some gaps and flaws in the application of the OLWR Plan. Consequently, in 2008, the province initiated a review of the Plan. In March 2010, the Ministry of Natural Resources (MNR) — the lead ministry for low water management — published an updated OLWR Plan.

The OLWR Plan

The OLWR Plan sets out a strategy for monitoring, declaring and responding to low water conditions. The Plan establishes three levels of low water conditions that require a response: Levels I, II and III, indicating the increasing severity of drought conditions. The Plan sets out indicators — precipitation and streamflow levels — and thresholds for identifying potential low water conditions (see Table 4.1.1). MNR is responsible for collecting and analyzing the streamflow and precipitation data from around the province. If an indicator crosses a threshold, MNR will alert the local conservation authority (CA), or vice versa in some cases, and together they will verify the watershed conditions.

Declaring and Responding to Low Water Conditions under the Plan

Level I Condition (Potential Water Supply Problem)

The Plan designates the local CA (where applicable) as responsible for declaring when a watershed has entered a Level I condition. If declared, the CA must: establish a local watershed-based Water Response Team (WRT), consisting of representatives from local water-using sectors, the CA, and municipal and provincial staff; and, convene a WRT meeting to begin co-ordinating response activities among its members. The Plan directs the WRT to encourage water users to voluntarily reduce water use, with a target 10 per cent reduction. For example, during Level I, municipalities may encourage residents to restrict non-essential water use (e.g., car washing, lawn watering), while the Ministry of Agriculture, Food and Rural Affairs (OMAFRA) might conduct outreach to farmers about conservation irrigation practices.

Level II Condition (Potential Serious Water Supply Problem)

As with Level I, the CA is responsible for declaring when a watershed enters a Level II condition. During Level II, the WRT continues to co-ordinate actions to try to achieve a further 10 per cent reduction in water use. At this stage, for example, municipalities may implement by-laws to restrict non-essential water use, while the Ministry of the Environment (MOE) may refuse to issue Permits to Take Water (PTTW) for new water takings (water takings over 50,000 litres/day generally require a permit), as well as work with existing permit holders to encourage voluntary reductions.

Level III (Drought) Condition (Inability to Meet Water Demand)

Unlike the earlier stages, a Level III condition may only be declared by the province through its standing Low Water Committee. This committee (led by MNR, with staff from MOE, OMAFRA,

Table 4.1.1. OLWR Indicators and Thresholds for Declaring Low Water Conditions.
(Adapted from: the Ontario Law Water Response Plan, March 2010)

CONDITION	PRECIPITATION THRESHOLDS	STREAMFLOW THRESHOLDS
Level I	Precipitation is less than 80 per cent of the average precipitation for the corresponding 3-month or 18-month period	*Spring*: monthly flow is less than 100 per cent of lowest average summer month flow *Other times*: monthly flow is less than 70 per cent of lowest average summer month flow
Level II (can only enter from Level I or Level III)	Precipitation is less than 60 per cent of the average precipitation for the corresponding 1-month, 3-month or 18-month period OR More than 2 weeks (in high water demand areas) or 3 weeks (in moderate water demand areas) with less than 7.6 mm of rain	*Spring*: monthly flow is less than 70 per cent of lowest average summer month flow *Other times*: monthly flow is less than 50 per cent of lowest average summer month flow
Level III (can only enter from Level II)	Precipitation is less than 60 per cent of the average precipitation for the corresponding 1-month, 3-month or 18-month period	*Spring*: monthly flow is less than 50 per cent of lowest average summer month flow *Other times*: monthly flow is less than 30 per cent of lowest average summer month flow

and the Ministry of Municipal Affairs and Housing) is responsible for liaising with all WRTs across the province once they reach Level II, and for co-ordinating the provincial government's response efforts.

A Level III condition cannot be declared based on the physical thresholds alone; there must also be documentation of social, environmental and economic impacts. To declare a Level III, the Low Water Committee must ensure that the WRT has:

1. demonstrated and documented that the majority of water users have participated in conservation efforts during Levels I and II;
2. documented any significant social, environmental and economic impacts arising from the low water conditions; and
3. provided recommendations on prioritizing water use restrictions within the watershed.

As Level III represents the most severe condition, the Plan's response switches from a largely voluntary approach to an increasing use of regulatory measures, including municipal by-laws to restrict water use and MOE amendments to PTTWs to impose water use restrictions as appropriate. The goal at this stage is to "reduce and manage water use demands to the maximum extent."

Although the physical criteria for a Level III declaration have been met at various times since the Plan was adopted, the Low Water Committee has never declared a Level III condition.

Amendments to the OLWR Plan

In August 2009, MNR posted a proposal notice on the Environmental Registry setting out proposed amendments to the Plan. The notice also stated that a "full policy review" to address additional program concerns would take place in fall 2009 and would be posted on the Registry for public comment. However, the promised second proposal notice for a full policy review never happened. In January 2012, MNR posted a decision notice confirming that the original proposed amendments had been adopted almost two years earlier, in March 2010.

IMPLICATIONS OF THE DECISION

Improving Plan Effectiveness

The amendments to the OLWR Plan should improve the effectiveness of the WRTs and remove some roadblocks in the low water response process. Specifically, the revisions to the Plan:

- **Explicitly require MOE to provide PTTW information to WRTs** – MOE's PTTW data, including actual water-taking volumes from the previous year, should enable the WRTs to analyze and quantify baseline water use patterns, which should improve the ability of WRTs to prepare for and respond to low water conditions.
- **Emphasize earlier establishment of WRTs** – The Plan encourages WRTs to meet and gather basic watershed information *before* the potential onset of a low water condition to "ensure that the tools and information necessary for drought management are kept current." This should foster better prepared WRTs and faster, more effective responses to low water conditions.
- **Shift responsibility for declaring Level II conditions to CAs** – Previously, WRTs declared Level II conditions; shifting responsibility to CAs, which are better equipped for this role, should support prompter Level II declarations.
- **Reduce conflicts of interest** – Previously, each WRT was chaired by one water-user member elected by the WRT. To address potential conflicts of interest, the Plan now recommends that the CA co-chair the WRT with a water-user, and requires all WRT members to disclose potential conflicts of interest.

Minimum Flow Thresholds for Ecosystem Health

The revised OLWR Plan encourages CAs and WRTs to develop local thresholds, such as minimum in-stream flow thresholds for aquatic ecosystem health. Such thresholds would evaluate the minimum streamflow needed to maintain fish and other biota, as well as the minimum flow-rate to assimilate pollutants (such as wastewater) discharged into the water body to maintain adequate water quality. The Plan notes that such a threshold could become an additional indicator for declaring a Level III condition for the watershed.

Ecosystem thresholds could help protect aquatic ecosystems from the adverse effects of water takings that would exacerbate the natural disturbances of low water conditions. However, implementing this direction (i.e., actually quantifying ecological needs) is quite difficult.

Recognizing Integrated Watershed Management

The Plan includes new language to recognize the importance of "integrated watershed management" and "a more proactive approach to water management" to prevent low water conditions from occurring. While the inclusion of this language is important, the OLWR Plan is primarily a response plan, not a prevention plan. As such, the true measure of success will be the extent to which integrated watershed management is incorporated and applied in other programs, such as MOE's PTTW program, provincial land use policies and municipal plans.

Still Waiting for Groundwater Indicators

The original OLWR Plan stated over a decade ago that groundwater indicators would be developed for the Plan. Groundwater indicators are important to help identify low water conditions, especially in areas heavily dependent on groundwater, and to assess the general state of local aquifers. While MNR did fund pilot projects for five CAs to develop and test groundwater indicators in 2008 and 2009, the Plan still does not include groundwater indicators.

Major Policy Issues Still to be Addressed

In the August 2009 proposal notice, MNR committed to consider the following outstanding issues in a subsequent "full policy review" scheduled for fall 2009:

- the effectiveness of the program to achieve water use reductions during Levels I and II (including the focus on voluntary reductions);
- the effectiveness of the information provided to WRTs;
- achieving a Level III declaration;
- principles for prioritizing water uses; and
- emerging issues, such as climate change.

This list includes some major outstanding issues. Most significantly, the voluntary nature of the water use reductions during Levels I and II, and the onerous requirements to obtain a Level III declaration have been identified by many stakeholders, including the ECO, as serious barriers to drought response. Nevertheless, as of August 2012, the ECO is unaware of any OLWR policy review being initiated.

ECO COMMENT

Severe low water conditions can have severe implications; droughts can cause significant social and economic stress for farmers, businesses and residents, as well as affect aquatic ecosystems. Ontario — despite its wealth of water — is not immune to the threat of drought, especially when considering the changing climate.

An effective OLWR Plan is critical to ensure that the responsible parties have the tools to respond efficiently when low water conditions occur. The 2010 amendments to the OLWR Plan — including the revisions to support a better flow of information, encourage advance planning, and shift roles and responsibilities to more appropriate bodies — should improve aspects of the low water response process.

However, there is still a long way to go. The ECO is troubled that a number of significant policy issues remain unaddressed. In our 2007/2008 Annual Report, the ECO expressed major concern about the prohibitive hurdles to obtaining a Level III declaration. Citing examples of streams that had completely dried up without a Level III declaration, the ECO stated "clearly the mechanisms of the OLWR Plan were not working." The 2010 amendments do very little to resolve this problem.

The Plan continues to focus on voluntary water reductions during Levels I and II. WRTs cannot require water users to participate in conservation efforts; yet, widespread participation during Levels I and II is a prerequisite for a Level III declaration. Moreover, it is exceedingly difficult for WRTs to document in a timely manner the conservation measures taken, as well as the social and economic impacts of the low water conditions — also requirements for a Level III declaration.

When a drought hits a region, time is of the essence. However, the Plan's onerous requirements for a Level III declaration could take WRTs weeks to undertake (especially if the drought coincides with staff summer vacations), allowing serious damage to occur before necessary response measures begin. The ECO is extremely concerned that when the next severe drought hits Ontario, the province will not be in a position to respond appropriately. The ECO strongly urges MNR to fulfil its promise to review and address the Plan's significant barriers to drought response.

The ECO has also criticized in past reports the failure of MOE's PTTW program to include methods to prioritize the allocation of PTTWs and consider the cumulative impacts of water takings to better prevent low water conditions. The ECO believes that it is preferable to manage water takings proactively than to implement restrictions on PTTW holders after low water conditions have arisen. The ECO urges MOE to ensure that PTTWs are issued in a manner consistent with the long-term ecosystem needs of the watershed (for more on this issue, see Chapter 4.2 of this Part of this Annual Report).

Finally, the ECO reminds the province of the necessity to support CAs and WRTs, both financially and technically, in executing their various functions under the Plan. For example, while the ECO is pleased that CAs and WRTs will receive better data from MOE's water-taking database, the teams require sufficient capacity to interpret this raw data into useful watershed information. Similarly, the ECO strongly supports the new language in the Plan encouraging CAs to develop indicators for ecosystem health; however, the CAs require provincial guidance and support to undertake this activity. Lastly, the ECO urges MNR to invest the necessary resources and efforts to get the long-awaited groundwater indicators up and operational.

RECOMMENDATION 6	The ECO recommends that MNR fulfil its commitment to complete a full policy review of the Ontario Low Water Response Plan.

For a more detailed review of this decision, please refer to Section 1.7 of the Supplement to this Annual Report. For ministry comments, please see Appendix C.

4.2 | Water-Taking: Leave Something for the Fish

Despite Ontario's reputation for being "water-rich," some rapidly developing regions of the province face serious questions about the adequacy of long-term water supplies. An estimated 500,000 private wells still provide 90 per cent of rural Ontarians with drinking water. Those private well owners are often worried about the reliability of water supplies and the possible impacts of competing uses. Pressures on water supplies are being intensified by the effects of a changing climate, including changing patterns in groundwater recharge and surface water runoff, and lower water levels for the Great Lakes. In light of such forecasts, MOE is now asserting the value of water conservation.

With its long-standing legislated mandate to manage Permits to Take Water (PTTWs) under the *Ontario Water Resources Act* (*OWRA*), MOE has enormous potential — and responsibility — to promote sustainable water use and water conservation. Municipalities, farmers irrigating crops, industries, golf courses — indeed, most users taking more than 50,000 litres of water per day from groundwater or surface water — must apply to MOE for a PTTW. The ministry reviews all PTTW applications and issues permits with conditions and expiry dates, as guided by O. Reg. 387/04 (Water Taking) under the *OWRA* and the Permit to Take Water Manual (the "PTTW Manual"), which was last updated in 2005. In an average year, the ministry processes about 1,500 applications for PTTWs, and about one-third of these are renewals of expiring permits. As of April 2012, there were over 6,000 active PTTWs in effect in Ontario, the vast majority of permit holders clustered in the densely populated southern parts of the province, as illustrated in Figure 4.2.1.

Ontario's PTTW program has evolved gradually since its establishment in 1961. Some key milestones include:

- **1994** — the public gained the right to see and comment on a limited subset of PTTW applications through the Environmental Registry, under the *Environmental Bill of Rights, 1993*.
- **1999** — the version of the water taking regulation in place at the time was amended to ban major water diversions, and language added to allow for strengthened ecosystem protection.
- **2004-2005** — the water taking regulation was amended again to phase in mandatory reporting of actual water takings and to prohibit certain consumptive water takings within defined high use watersheds. Application fees were also introduced, ranging from $750 to $3,000 per permit.

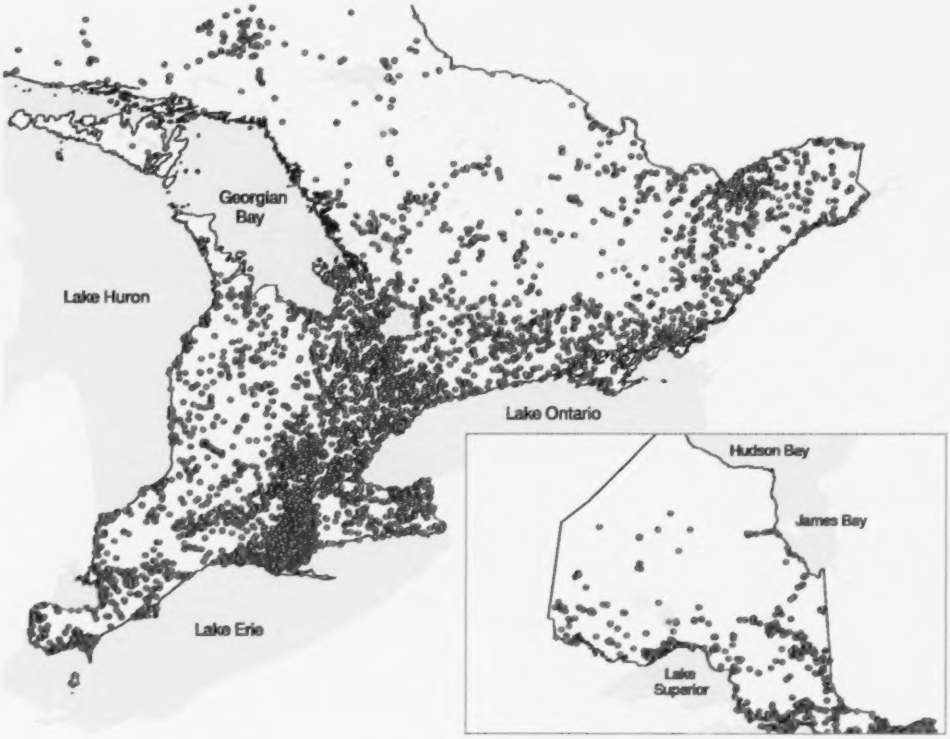


Figure 4.2.1.
Distribution of water-taking permits in Ontario, 2012 (Source: Ministry of the Environment, 2012).

The unusually dry spring of 2012 prompted the declaration of a Level 1 Low Water condition for the entire Grand River watershed as early as April 25. The watershed experienced only about a quarter of the normal rainfall expected in April. The low rainfall followed a mild winter and a light snow pack, as well as unusually high air temperatures in March (the monthly mean air temperature was 6.7 degrees above the long-term average). As a result, by late April, the water levels in many rivers and streams had already dropped to mid-summer levels, and water users were asked to cut consumption by 10 per cent. At the same time, five other watersheds in Ontario (including the Upper Thames, Maitland Valley and St. Clair Region) also had moved to a Level 1 Low Water condition.

The ECO reported on the PTTW program four times between 2001 and 2008, noting improving trends in the quality of Environmental Registry notices and praising MOE's requirement that water takers document actual daily takings and submit data to the ministry annually. However, the ECO also advised the legislature repeatedly of shortcomings in the ministry's program:

- Water needed for ecosystem functions cannot be protected because the ministry lacks adequate information on existing water takings (finding in 2001).
- MOE does not provide clarity on how to rank ecosystem needs (finding in 2004/2005, 2005/2006 and 2007/2008).
- Transparency is poor because the Environmental Registry offers only a narrow window on the universe of water takings (finding in 2001 and 2005/2006).
- Most water is still taken free of charge by permit holders. Only two per cent of total permitted water takings (by volume) are subject to a provincial fee, and that fee is a very modest $3.71/million litres (finding in 2007/2008).

An update on MOE's PTTW program is timely, since sufficient time has elapsed to allow recent reforms to be implemented. Mandatory reporting on actual water taking has been in effect for at least four years (six years for some sectors). The PTTW Manual has been in effect for seven years, and reflects the principles specified in the ministry's Statement of Environmental Values (SEV), including commitments to use an ecosystem approach, to consider cumulative impacts of water takings and to use adaptive management. As described in Chapter 5.1 of this Part of the Annual Report, ministries are expected to consider their SEV when issuing environmentally significant instruments. The ECO's interest is focused on the following areas of the PTTW program:

- the use of water-taking data in developing water budgets and low water response plans;
- protection of natural functions of streams and water bodies;
- progress on water conservation;
- consideration of the cumulative impacts of water takings; and
- transparency of the water-taking process for the public.

How is MOE Using Actual Water-Taking Data?

Most permit holders are now monitoring and reporting actual water takings to MOE's database, which is a significant improvement. Though this reporting has been mandatory since at least 2008, compliance in the first years was sporadic, especially in the agricultural sector. As a result of MOE's recent outreach and education efforts, over 80 per cent of permit holders are now reporting actual water takings, according to the ministry. MOE has also given conservation authorities (CAs) access to this new database. Until 2008, CAs had been forced to rely on *maximum* quantities listed in permits as surrogate estimates of actual water takings; these surrogates were often grossly inaccurate.

The new water-taking database has vastly improved the ability of CAs to prepare water budgets. Water budgets will help communities understand and visualize the quantitative dynamics of their watersheds: how much water is available, how much water is being used, and what the risks are to sustainable supply. The preparation of water budgets is a new requirement under the *Clean Water Act, 2006*, which focuses exclusively on protecting municipal drinking water sources. As of February 2012, all 38 Source Protection Areas had completed at least conceptual "Tier 1" water budgets; 23 areas had seen a need to complete more advanced "Tier 2" budgets, and 17 areas were working on sophisticated "Tier 3" budgets, usually focusing on sub-watersheds where municipal water supplies face special stresses. Because of the focus on municipal drinking water, the water budgeting process provides only patchy geographic coverage. In locations where water quantity stresses do not affect municipal drinking water supplies, detailed budgets will not be prepared.

MOE's ability to evaluate possible impacts of proposed water takings has long been hampered by the lack of water budgeting tools and data. Unfortunately, the framework and methodology by which the ministry would integrate the new water budget information into its day-to-day work evaluating PTTW applications remains very unclear. While the ministry's water specialists can access the water-taking database and other data sources, the ministry does not plan to produce watershed-based inventories of water use that would reveal cumulative impacts. The water budgets newly developed in the Source Protection Areas will certainly be available to ministry staff, but MOE is only obligated to consider them from a drinking water perspective. As well, information sharing between the ministry and CAs on PTTW applications varies considerably and is not formalized by a protocol. Some CAs and MOE district offices have collaborative relationships enabling CAs to submit site-specific information if it exists, but MOE approves most PTTW applications after minimal data exchange between the agencies.

MOE's new water-taking database has the potential to be extremely valuable in times of drought. Drought response is led by the Ministry of Natural Resources (MNR), through CAs and watershed-based Water Response Teams. These teams have the challenging task of co-ordinating responses to drought conditions, including advocating water conservation (see Chapter 4.1 of this Part of this Annual Report). The teams are expected to "ensure that the tools and information necessary for drought management are kept current." An analysis of actual water takings — i.e., daily quantities, seasonal patterns, locations and uses — should be a critical tool for drought managers.

After Ontario's most recent severe drought in 2007, the ECO observed that Water Response Teams had difficulty accessing data on actual amounts of water being withdrawn. According to MOE, the teams can expect higher quality data in future, due to better reporting of actual water takings. MOE states it can supply the teams and CAs with "a list of active permit holders across Ontario, including source types (i.e., ground and surface water), geographic coordinates, permitted takings and actual takings for previous years." But as noted above, MOE does not have plans to work up this raw data into watershed-based water use inventories or estimates of seasonal water use patterns. MOE also cautions that the database does not provide real-time water-taking information for the current year, and that teams should rely instead on stream flow gauging stations. It is unclear whether numbers or locations of stream flow gauging stations are adequate for this purpose: MOE states that "it does not generally require water takers to install devices or otherwise alter water sources to allow measurement of the flows or water levels of the water source."

Protection of Natural Functions of Streams and Water Bodies

On paper at least, Ontario's water-taking rules do recognize the need to protect ecosystem functions. For surface water takings, for example, standard language in all permits specifies that water taking "shall be carried out in such a manner that stream flow is not stopped and is not reduced to a rate that will cause interference with downstream uses of water or with the natural functions of the stream." Some permits also have requirements to prevent disruption of fishes and invertebrates. Such warnings are helpful to a degree, as they alert permit holders to ecosystem needs, but they are only a first step. The ministry does not monitor stream flows itself, nor does it generally require permit holders to do so, relying mostly on downstream users to complain if water flows are interfered with. MOE also does not monitor the condition of fishes and invertebrates. The ministry does carry out some pro-active inspections of water-taking permit holders; in fiscal years 2011-2012, the ministry inspected just under four per cent of all PTTWs for general compliance, including conditions on maximum takings and interference issues. The ministry also responds to complaints about water takings.

For some permits, MOE stipulates that the water taking shall not exceed "10 per cent of available stream flow." But such a threshold limit is too simplistic to protect all ecosystem needs, since hundreds of variables may be relevant. Stream-dwelling species, such as fishes or invertebrates, have evolved to expect highly variable habitat conditions over their life cycles. Depending on season and life stage, they may require: fast or slow water; high or low nutrient levels; shallow riffles or deep pools; and silt or gravel streambeds. Indeed, a Lake Simcoe-focused guidance document prepared for MOE in 2011 states that "consideration of a single, minimum threshold flow, to the exclusion of other ecologically relevant flows, is no longer an acceptable approach to in-stream flow management."

In a 2010 report on watershed governance, Conservation Ontario emphasized that more attention should be paid to ecosystem needs when decisions are made about water taking and watersheds. But MOE is the decision maker on water takings, and CAs have only a commenting role. Moreover, CAs have no regulatory authority to monitor compliance with hundreds of water-taking permits that may be active within a given watershed – nor do they have resources for undertaking such work. And while CAs have been given a role in drought response, that role is hampered by a lack of provincial guidance on how to quantify ecosystem needs. In order to protect the water quantity needs of ecosystems in times of drought, the quantification approach should have credibility, broad acceptance and authority. Thus provincial guidance would be preferable to individual CAs developing a patchwork of approaches.

Little Progress on Water Conservation

MOE has made little progress on promoting water conservation since the ECO last reported on this issue in our 2007/2008 Annual Report. The vast majority of water is still taken free of charge by permit holders. As of August 2012, only two per cent of the total volume of permitted water takings have been subject to a modest provincial fee, affecting only about 100 facilities province-wide. Fortunately, the June 2012 provincial Budget announced plans to review water pricing, with the intention of expanding the user pay charge to most industrial and commercial water users by 2013/2014. A reasonable price on water will encourage conservation and will be a welcome improvement.

Mandatory water conservation plans have also stalled; although amendments to the *OWRA* were passed in 2007 that would authorize MOE to require permit holders to prepare mandatory water conservation plans, these provisions have never been proclaimed into force. Instead, MOE has employed a softer approach; since 2005, the ministry has been asking water-taking applicants merely to declare their existing or planned water conservation measures. But the ministry has no summary on the status of water conservation measures taken by permit holders. The ECO's sampling of recently issued PTTWs in a high-use watershed observed that only two of eight permits required permit holders to report on water conservation measures. Since permit approvals are valid for up to ten years, this soft approach on water conservation (combined with free or very cheap water) may perpetuate wasteful water practices far into the future. Moreover, the 2012 Ontario Budget eliminated $10.4 million in MOE funding previously earmarked to help municipalities develop water sustainability plans (including water conservation plans).

WHAT IS THE COST OF THE 2.5 MILLION LITRES OF WATER NEEDED TO FILL AN OLYMPIC-SIZED SWIMMING POOL?

For most holders of Ontario water-taking permits — no charge

For those few permit holders subject to the provincial fee — just $9.28

Limited Evidence that Cumulative Impacts are Considered

The PTTW Manual states that the ministry will consider cumulative impacts of water takings, but it appears MOE is requiring proponents to assess cumulative effects only in a few special cases. MOE has advised ECO of five instances province-wide where cumulative impact assessments have been undertaken, including two cases involving quarry operators. The ECO's sampling of 20 recently issued PTTWs for golf courses found no references to cumulative effects. In some watersheds, cumulative impacts could be significant; for example, the Grand River watershed has over 700 active PTTWs, with permits constantly being issued, renewed and expiring, including significant municipal water takings. It is hard to envision how MOE could have evaluated cumulative impacts in such watersheds prior to the development of water budgets. As noted above, MOE's methodology for mining the new water-taking database and new water budgets to reveal cumulative effects remains unclear. As a result, it may not be surprising that the ministry states it "is not aware of situations where cumulative permitted water takings in a specific stream are exceeding the needs of the natural functions of the ecosystem."

Weak Transparency on Water Takings

Transparency on water taking in Ontario continues to be rather poor, despite MOE's commitment in the PTTW Manual "to promote public and local agency involvement." The transparency provided via the Environmental Registry does not apply to most permits, including permits for municipal water takings (18 per cent of all permits) and agricultural water takings (38 per cent of all permits). Province-wide, the ministry estimates that only 25 to 30 per cent of all permits are accessible on the Registry, representing a small fraction of total water volume taken. For example, permit information on more than half the total volume of permitted water takings in the Grand River watershed is not available to the public through the Environmental Registry; therefore, the public is not able to comment on proposed locations, uses, volumes, conditions and expiry dates for those takings. Despite the unique watershed expertise of CAs, MOE provides these agencies with just a slightly wider window of notification than the public.

Transparency surrounding MOE's risk-ranking of permits is also weak. Since 2005, MOE has categorized PTTW applications as Category 1, 2, or 3, based on the anticipated risk to other water users and the environment, applying the greatest scrutiny to the roughly 30 per cent of permits falling into Category 3. More stringent rules also apply to certain "high use watersheds" along the northeast shore of Lake Erie, where a significant portion of PTTWs are concentrated. Users of the Environmental Registry would expect to be informed about the risk rankings of individual permits, and whether permits are in a "high use watershed." But a sampling of almost 40 permits recently posted on the Registry found only one instance where the ministry stated the risk category.

ECO COMMENT

The ECO has found that some aspects of MOE's PTTW program have been significantly improved. However, the ministry has also failed to deliver on a number of core commitments.

Most permit holders are now monitoring and reporting on their actual water takings. This is an excellent development. The ECO commends MOE for establishing the water-takings database and for making it available to CAs, allowing them to develop water budgets for the first time. However, the water budgets as currently developed are weighted towards social and economic needs, since they were intended first and foremost to protect municipal drinking water supplies. Some watersheds, where water stresses are affecting ecosystems rather than municipal water supplies, may not be flagged as concerns by the existing water budgets.

Since 2005, MOE's PTTW Manual and the water taking regulation have reflected the need to protect natural functions of ecosystems. The PTTW Manual also incorporates consideration of the cumulative impacts of water takings. Unfortunately, the ministry lacks the tools needed to realize these commitments. In this regard, the ECO suggests that at least three changes are needed:

- First, in collaboration with MNR, MOE should promptly develop guidance on how to prioritize, monitor and protect key indicators of ecosystem functions in relation to water takings. Obtaining data on actual water use rates is necessary, but not in itself sufficient, to protecting ecosystems. Water managers also need quantitative threshold indicators of how much water is needed by the ecosystem itself at critical locations and at critical times of year. For drought planning, for example, minimum ecosystem needs should be defined and protected long before a drought takes hold. Additional critical thresholds may be needed to protect fish spawning, localized wastewater assimilation or other ecosystem functions. MOE and MNR are encouraged to build on existing work, such as their recent collaboration with the Lake Simcoe Region Conservation Authority, sketching out how quantitative targets for ecological stream flows could be set.

- Second, MOE needs a methodology to integrate existing water budget information and ecosystem needs into case-by-case reviews of PTTW applications, as well as broader land use planning decisions, in order to consider cumulative impacts.
- Third, MOE needs to better monitor whether permit holders are complying with conditions of water-taking permits intended to protect ecosystem needs. Relying too heavily on complaints from downstream users is problematic, since ecosystems cannot complain.

To date, MOE has made remarkably little progress in promoting water conservation. Hopefully, the review announced as part of the 2012 Ontario Budget will help to phase in full-cost pricing of water. The February 2012 report on the Reform of Ontario's Public Services (the Drummond Report) encouraged this approach:

> *More costs could be recovered if the commercial and industrial water users who create the need for water management programs pay for their use of water. The charge would also create a financial incentive for companies to use water more efficiently.*

Concerted action by MOE on full-cost water pricing would be a powerful catalyst for water conservation, and could help fund monitoring and research on ecosystem needs, which are now sorely lacking. Water conservation, in turn, would help protect ecosystem functions. Full-cost water pricing clearly should be a priority for the ministry.

For ministry comments, please see Appendix C.

4.3 | Septic System Re-inspections: A Good First Step

Many Ontario lakes are affected by the nutrients released from septic systems. On Lake Simcoe, for example, close to 12,000 cottages with septic systems contribute approximately 4.4 tonnes of phosphorus to the lake every year. Increased nutrient loads from wastewater (especially phosphorus) can drastically alter the quality of lakes and streams and degrade aquatic habitats.

In March 2011, the Ministry of Municipal Affairs and Housing (MMAH) announced that on-site septic systems in certain parts of Ontario will require mandatory re-inspections every five years. MMAH amended parts of the Ontario Building Code (O. Reg. 350/06) made under the *Building Code Act, 1992*, governing the installation, operation and maintenance of small septic systems. Local authorities in certain areas (i.e., municipalities, conservation authorities, boards of health) must now develop inspection programs for septic systems that treat up to 10,000 litres of wastewater per day. The ministry stated that the amended regulation helps protect the province's drinking water and the natural environment.

The new requirements for septic system inspections will apply to two types of geographic areas in Ontario: (1) lands within "vulnerable areas," as defined under the *Clean Water Act, 2006*, where local source protection committees have identified septic systems as a significant threat to municipal drinking water; and (2) areas within 100 metres of the shoreline of Lake Simcoe or other water bodies in the Lake Simcoe watershed.

For other areas of the province, local authorities will continue to have discretion whether or not to periodically inspect septic systems. A survey suggests that only a small percentage — about 14 per cent — of municipalities are voluntarily re-inspecting septic systems after installation and approval.

ECO COMMENT

The ECO has long advocated for a septic re-inspection program. In 2002, the ECO urged MMAH "to encourage municipalities and stakeholders to promote systematic and comprehensive septic re-inspection programs throughout Ontario to ensure that inspectors identify faulty systems before they cause serious ground and surface water pollution problems."

The ECO's 2008/2009 Annual Report reiterated the need for mandatory septic system re-inspections. The 2011 decision by MMAH to require the re-inspection of septic systems in certain defined areas is a tacit acknowledgement that septic systems can cause health risks associated with municipal drinking water systems and also environmental problems for overburdened watersheds, such as Lake Simcoe. MMAH's approach is a good, but insufficient, first step as far as environmental protection is concerned.

From a municipal drinking water perspective, the new mandatory septic systems re-inspection requirement should help to identify and address bacterial contamination risks to municipal drinking water sources. From a watershed protection perspective, however, the new approach is not adequate. Because of the focus on protecting municipal wellhead areas, the geographic reach of the re-inspection program will be patchy, and will not capture many lakes and streams that are vulnerable to nutrient loadings from septic systems. In many parts of our province, septic systems will continue to discharge nutrients without periodic inspections, with unquantified impacts on aquatic ecosystems.

The ECO urges the Ontario government to expand the reach of the septic systems re-inspection program to areas that are ecologically vulnerable to loadings of nutrients, especially phosphorus. Such areas might include heavily developed cottage lakes and oligotrophic watersheds. Both Conservation Ontario in 2010 and the Advisory Panel on Ontario's Drinking Water Stewardship Program in 2007 recommended expanding efforts beyond municipal wellhead areas. Identifying such ecologically vulnerable areas would be within the mandate and expertise of the Ministry of the Environment (MOE), rather than MMAH, especially since MOE is responsible for setting and enforcing limits on phosphorus concentrations in lakes.

For a more detailed review of this decision, please refer to Section 1.5 of the Supplement to this Annual Report. For ministry comments, please see Appendix C.

4.4 | Concerned Ontarians use *EBR* Investigation to Expose Errors in Sewage Lagoon Permit

Sewage holding ponds or "lagoons" are commonplace in rural Ontario. In general, these low-tech systems for handling sewage offer a cost-effective and appropriate alternative to sewage treatment plants for small municipalities. There are several types, but one of the most common is the facultative seasonal-discharge lagoon (the term "facultative" refers to microbes that can live and grow in both oxygen-rich and oxygen-poor environments). In essence, these systems collect and hold sewage in large shallow ponds, or "cells," allowing natural biological processes to gradually break down the organic material and reduce pathogens to the point where the effluent can be released into the natural environment with little or no harm. In Ontario, because of the extremes of climate and seasonal water flow patterns, the effluent often is released only in the spring and fall, when the environment can best deal with the discharged material.

Every lagoon in the province operates subject to a Certificate of Approval (C of A) — now called an Environmental Compliance Approval — issued by the Ministry of the Environment (MOE). This approval stipulates the rated capacity of the lagoon (how much sewage it can receive on an average daily basis), as well as the limits for certain parameters, such as the maximum concentration of suspended solids and carbonaceous biochemical oxygen demand ($CBOD_5$) in the released effluent (see Box for definitions). In addition, the C of A sets limits on the loadings (i.e., total weight of contaminants) that can be released to the receiving waters in each season.

DEFINITIONS

$CBOD_5$: The five-day carbonaceous (nitrification inhibited) biochemical oxygen demand measured in an unfiltered sample.

Average Daily Flow (ADF): The cumulative total sewage flow to the sewage works during a calendar year divided by the number of days during which sewage was flowing to the sewage works that year.

Rated Capacity: The Average Daily Flow for which the sewage works are approved to handle.

Hydraulic Retention Time (HRT): The theoretical amount of time required for a given flow to pass through a lagoon.

In October of 2010, two Ontarians used the *Environmental Bill of Rights, 1993* (*EBR*) to file an application for review of the C of A issued to the Municipality of French River for its two-cell lagoon facility in Noëlville, Ontario (the "Noëlville Sewage Lagoon" or "NSL").

The Applicants' Concerns

The applicants contended that an error had been made when MOE calculated the allowable capacity of the NSL. They stated that the lagoon is operated as a batch system, with one cell filling for six months, holding for five months, and then discharging for one month, while the other cell does the same but on an offset cycle, so that it holds while the other fills, discharging during the sixth month so that it is ready to be filled as the other one holds (see Figure 4.4.1.) (Note, the ECO believes that this is more accurately described as a "fed-batch system, tandem operation," because the input flow is continuous, the output flow is done seasonally in batch mode, and the two cells are operated in tandem, that is, alternating between filling and holding.) With this type of operation, the applicants argued, the system's capacity should be calculated by dividing the entire volume of the two cells by 365 (number of days in the year) to get an average daily flow (ADF). Although this calculation results in an ADF of 392 cubic metres per day (m^3/day) for the NSL facility, its C of A allows an ADF of 477 m^3/day. The applicants feel that the C of A's overestimated flow rate has resulted in the facility having to discharge effluent too early on several occasions in the past, to the detriment of the quality of the receiving waters.

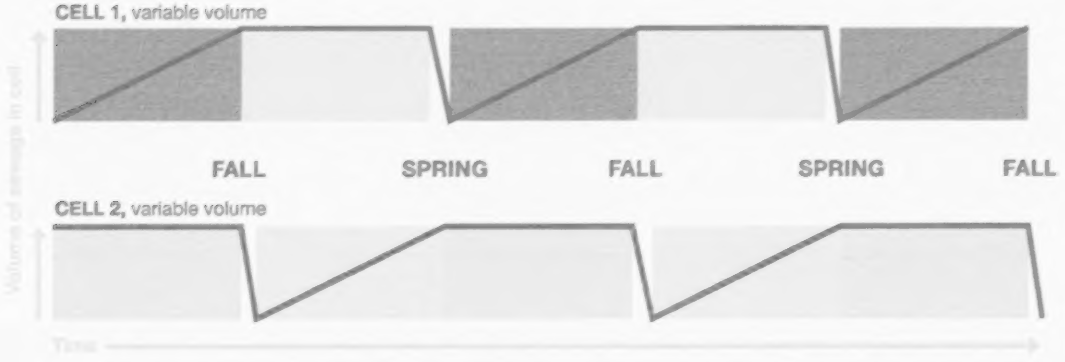


Figure 4.4.1.
Fed-batch system, tandem operation.

The applicants contended that the incorrect ADF was the result of the ministry using the wrong formula. The applicants asserted that the ministry erroneously used the formula for continuous-flow systems (see Figure 4.4.2) to calculate the rated ADF, dividing the total volume by the design retention time of 300 days, instead of by 365. In continuous-flow systems, where the cell is always full (because there are at least three cells in series, as in Figure 4.4.2) and the effluent flows out of the system constantly and at the same rate as the input flow, the ADF is equal to the volume divided by the retention time. The applicants argued that the NSL facility is not a continuous-flow system, but rather a batch system, where that formula does not apply. They expressed concern that this mistake may also have been made for other lagoon systems in Ontario, putting the natural environment in these areas at risk.

MINISTRY RESPONSE

The ministry agreed to conduct a review of the NSL's C of A. In its resulting report, the ministry clearly stated that the NSL system was not designed to be operated in batch mode, and that the design approach used for the NSL facility was based on continuous operation of the lagoons as "plug flow reactors."

The ministry stated that plug flow reactor lagoons are typically designed to be operated in parallel, receiving approximately equal raw sewage flows continuously. It did admit that although the lagoons receive sewage continuously, they discharge intermittently (seasonally).

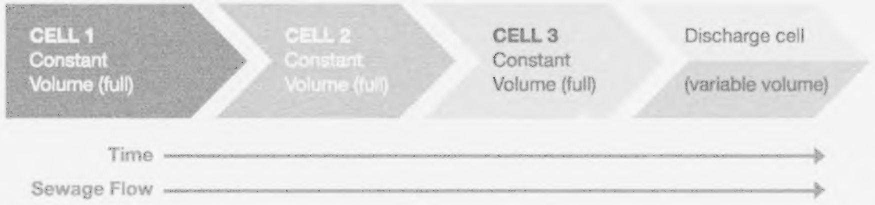


Figure 4.4.2.
Continuous flow system.

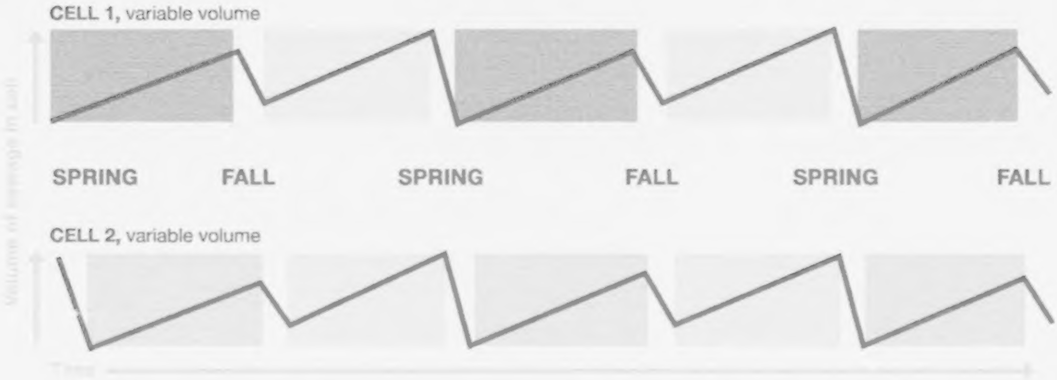


Figure 4.4.3.
Fed-batch system, parallel operation.

Although the ministry identifies this system as reactors designed to be continuous plug-flow but operated with seasonal discharge, the ECO believes that this system is best described by the term "fed-batch system, parallel operation," shown in Figure 4.4.3.

It flows from this design, MOE contended, that hydraulic retention time (HRT) (see Box) is calculated by dividing the volume of a lagoon by the design flow rate.

In addition, MOE's report pointed out that the system has to operate within the spring and fall discharge constraints specified in the facility's C of A. The fall discharge constraint is a maximum daily $CBOD_5$ loading of 31.8 kilograms (kg) for a maximum duration of 35 days. The report stated that this establishes a maximum discharge volume during the fall of 44,520 m^3.

According to MOE, the facility could not be operating as a batch system that empties the full volume of one of its cells in the fall (as the applicants claimed) because each of the facility's cells are considerably larger than this maximum allowable fall discharge volume.

The ministry acknowledged that there had been some operational issues with the lagoon. In April 2007, both lagoons were full and bypass events occurred (raw sewage had to be directly discharged to the environment, bypassing the treatment system). The ministry stated that this indicates that either the lagoons were not operating optimally that year or there were high inflow and infiltration issues. During the fall of 2008, an event occurred where there was a daily loading to the river of 53.5 kg $CBOD_5$, in excess of the maximum allowable discharge of 31.8 kg $CBOD_5$. The ministry acknowledged that this constituted a non-compliance with the facility's C of A. However, the ministry pointed out that, with the exception of the events noted above, the facility met the effluent limits set by its C of A for the entire 2005-2010 period. The ministry also noted that the operators of the NSL facility took corrective actions to eliminate the possibility of a repeat of these occurrences.

The ministry also reported on the results of sediment sampling conducted by ministry staff in June 2009, in response to complaints that discharges originating from the NSL facility were contaminating Wolseley Bay 13 kilometres downstream. The ministry indicated that the samples did show both nutrient and metal levels above provincial standards, often by two or more times. These results indicate that the bay is at risk of increased growth of algae (due to phosphorus) and that some of the sediments are "grossly contaminated," limiting the types of organisms that can survive there.

Despite these findings, in the opinion of the ministry's technical staff, "the NSL facility could not be isolated as the primary source of impaired water quality in the bay." This conclusion, they stated, was based on "the observation of the significant downstream distance of the bay from the NSL facility."

The ministry concluded, based on its *EBR* review:

1. The NSL facility is designed to operate as a continuous plug-flow treatment system, and that its rated capacity of 477 m^3/day at 300 days HRT is a sound approach.
2. The batch treatment approach that the applicants assert is being used is not feasible due to the "maximum effluent $CBOD_5$ loading requirement of 31.8 kg/day during the fall discharge season."
3. There was no error in the design approach for the NSL facility, the lagoons are not undersized, and they meet all ministry design requirements.

For the full text of the ministry's decision, see our website at www.eco.on.ca.

ECO ANALYSIS

Due to the highly technical nature of this application, as well as the relative importance of the potential implications identified by the applicants, the ECO contracted an independent sewage-system expert to provide technical analysis and advice. The expert reviewed all the documentation available to the ECO, and the resulting consultant's report informed the ECO analysis that follows. The ECO found many errors and inconsistencies in the ministry's *EBR* review. The following discussion focuses on those that appear to be most significant.

The ECO found a number of serious errors in MOE's assessment of the approach to confirm design capacity. Perhaps most importantly, MOE's use of the term "plug flow reactor" to describe the NSL facility is misleading. The term "plug flow" does not refer to a type of sewage system design or operation; rather, it refers to a model of the mixing and flow regime (how the particles move through the system). It is used to predict effluent quality based on several factors, one of which is retention time. Because the mixing and flow regime is somewhat similar in fed-batch and continuous systems, the plug-flow model can be used for *both* systems to determine the retention time necessary for the required level of degradation to occur. However, the ministry appears to have confused the plug-flow model with the continuous-flow systems for which the model was originally developed. Because a fed-batch system can be modelled as a plug flow (for the purpose of predicting effluent quality) does not mean that it shares the other characteristics of a continuous-flow system.

If the NSL facility really were a continuous flow system, the hydraulic retention time would not be variable (every particle stays in continuous systems for roughly the same amount of time) and the formula used by the ministry (HRT equals the lagoon volume divided by flow rate, yielding an HRT of 300 days) would work. Fed-batch systems, however, have variable retention times. The "fill, hold, and release" patterns result in some sewage particles being in the system longer than others: the first particles that come into the system are held for all of the filling time; the last particles that enter before the filling period stops are only in the system for a few moments; accordingly, the average particle entering during the filling period is held for half the time. Therefore, as the applicants had correctly stated, the average HRT in any kind of batch system is determined by adding one-half of the filling time to the entire holding time, if any. Applying this calculation to the ministry's asserted system (Figure 4.4.3), which includes no holding time, would mean that sewage entering the system after the fall release (about one-half the total amount handled) would be itself released in the spring, five months later. The average retention time for that sewage would be about 75 days (half the filling time of 150 days).

In very general terms, the issue is this: an operator cannot put larger amounts of effluent through the same physical space on the same annual basis without a consequential reduction in retention time. If the facility is operating as the applicants contend (in tandem), then the applicants are correct that it cannot handle the rated ADF of 477 m^3 of sewage per day; if the facility is operating as the ministry asserts (in parallel), it could certainly handle the rated ADF, but only with much shorter retention times.

Would the retention times supplied by the ministry's approach be adequate to protect the environment? Unfortunately MOE did not provide the applicants or the ECO with the information needed to answer this question. To justify its assertion that the fed-batch system could do the job when operated in parallel, MOE should have applied the plug flow model using the shorter retention times that would undeniably be the case. If the model, applied correctly, had generated data showing that the parallel operation could deliver the required final effluent quality, the ministry would have made its case. Instead, MOE simply maintained that the 300-day retention time on the C of A (calculated based on the continuous-flow model) is correct. As the applicants had stated, and as the ECO's analysis shows clearly, the actual retention times would be much less than the 300-day "design retention time" and also, on average, much less than the roughly 240 days provided by the applicants' asserted approach.

It should also be noted that although MOE claims that the NSL is designed and operated as in Figure 4.4.3 (parallel), the applicants, who live in the area, insist that the system is actually operated as in Figure 4.4.1 (tandem). The release data provided from the Ontario Clean Water Agency appear to support the applicants' contention. Accordingly, the ECO believes that the reason that the facility has been able, with a few exceptions, to meet its water quality objectives over the past few years is that it has been and still is in fact operated in tandem (thus generally providing 240 days HRT) and that the daily flows are for the most part still below the rated ADF.

If the NSL facility has generally been doing its job adequately, the reader might ask why all of this matters. The importance lies in the potential risk involved with incorrectly permitted facilities. If Ontario's smaller municipalities are being routinely issued permits that overstate the capacity of their sewage systems, their elected officials may allow further development to occur in their region without adding to their treatment capacity, thinking that it is already sufficient. This could lead to crises in the future as systems become overloaded and water quality objectives cannot be met (as has already happened twice with the NSL facility).

Another major error in the ministry's review was asserting that the NSL facility cannot be operating in tandem, as the applicants contend, because of fall-discharge constraints. The error arose from the ministry's incorrect interpretation of the results of the potential discharge calculation. The ministry stated that the calculation yielded the *maximum* possible fall discharge; in fact, it provided the exact opposite. At a $CBOD_5$ concentration of 25 milligrams/litre (mg/l) (the highest concentration at which any discharge is allowed), the maximum release of effluent would be 44,520 m^3; however, as the $CBOD_5$ drops from the 25 mg/l C of A limit (which it will do as the quality improves over time), the allowable discharge *increases*, not decreases. In other words, as the treatment takes effect and the effluent becomes less polluted, the operators can discharge more of it while still meeting the fall discharge limits, which refer to total loadings in the receiving water, not concentrations. For instance, if the $CBOD_5$ in a single cell operating in a tandem system is reduced to 5 mg/L (which is quite easily achievable for a system with 240 days retention time), the allowable discharge in the fall would be five times the figure calculated by the ministry, or 222,600 m^3, which exceeds the volume of both cells and would easily allow for the full discharge of one cell in the fall, as per the applicants' assumptions.

The ministry's review contained other errors, omissions, and inconsistencies.

ECO COMMENT

The ECO disagrees strongly with MOE's findings as a result of this *EBR* review. Moreover, the ECO is extremely concerned that not only the NSL facility, but perhaps many other facultative sewage lagoons in rural Ontario, may have been issued Cs of A by the ministry that significantly overrate their true capacity. MOE cannot solve an issue of lack of capacity in a facility by simply giving the system a different and misleading name — plug-flow reactor — and asserting that it has a different (and unproven) method of operation, while at the same time erroneously implying that flow-through in a fixed-volume system can be increased without sacrificing retention time and effluent quality. If this approach is indeed widespread in Ontario, it could result in a rash of water-quality issues in coming years as smaller municipalities seek and accept new development, under the incorrect assumption that their sewage treatment capacity is sufficient to handle more volume.

In addition, the quality of MOE's review was startlingly poor. It included inconsistencies, omissions of key concepts, errors in very basic mathematics and, most disturbingly, an apparent lack of understanding of the basic concept — the plug-flow model — that formed the basis for its entire argument. Moreover, the ministry's decision not to further investigate the applicants' concerns about downstream water and sediment quality showed a worrisome lack of judgment. The ministry has a core duty to the public to assess the impact of the lagoon system on the receiving waters and the results of the sampling in Wolseley Bay definitely warranted further investigation. A full receiver assimilative capacity assessment should have been at least considered, in order to determine whether or not the NSL facility was making a substantial contribution to the undeniable downstream environmental impacts.

The ECO suggests that the ministry immediately undertake a proper reworking of this review. Moreover, for this new attempt, MOE should ensure the assignment of the appropriate resources. This area of the ministry's responsibility is much too important to be left in the confused state that this *EBR* review suggests may be the current case.

For a more detailed review of this application, please refer to Section 2.1.6 of the Supplement to this Annual Report. For ministry comments, please see Appendix C.

CHAPTER 5.0

PERMITTING ISSUES

Instruments are typically documents that permit or restrict activities, such as a Permit to Take Water, environmental compliance approval, licence or order. They are important tools used by the provincial government to regulate the environment and enforce environmental laws. Generally speaking, if an activity affects the natural environment, the proponent of the activity may need to apply for an approval from the responsible ministry. The approval instrument will usually set out legally enforceable conditions of approval.

In this Chapter of the Annual Report, the ECO highlights the province's use and enforcement of instruments. We also shine a spotlight on instruments in the context of the *Environmental Bill of Rights, 1993 (EBR)*, which grants Ontario residents the right to comment on, appeal and submit applications for review or investigation of certain instruments prescribed under the *EBR*.

This year, the ECO examines changes to one type of instrument issued by the Ministry of the Environment under Ontario's air quality regulation, O. Reg. 419/05. This instrument, called a "site-specific standard" authorizes facilities that cannot feasibly meet Ontario's generic air quality standards to meet an alternative, usually less stringent, site-specific compliance standard.

Regardless of the type of instrument being used, an instrument's effectiveness at protecting the environment is only ensured when the issuing ministry monitors and enforces the instrument's conditions. This point is clearly demonstrated in the ECO's review of an *EBR* application regarding a cement manufacturing facility located in Picton, Ontario. Residents in the area have been complaining for almost a decade to the province, without much success, that the dust emissions released by the facility exceed levels permitted under the company's regulatory approvals.

5.1 | Where the Rubber Hits the Road: Instruments and the *EBR*

When we talk about a government's responsibility for the natural environment, we think of the various policies, acts and regulations in place to protect our air, land and water and manage our natural resources. These laws and policies establish the overarching objectives and rules governing environmental protection and usually have broad, province-wide application. At the ECO, our attention is often focused at this level.

But "instruments" – documents, often site-specific, that permit, license, approve, authorize, direct or order specific activities to be undertaken (or not) – are how many of the province's environmental laws and policies are actually implemented on the ground. Instruments are not infrequent singular exceptions to the rules, but site-specific directions on how those rules are to be interpreted and applied. The government issues thousands of instruments every year, collectively representing a significant component of Ontario's environmental protection framework. Whether an approval of a new landfill down the road, wind turbines in your neighbourhood or the taking of water from a nearby lake, instruments operate on the local level at which you are most likely to be personally affected.

This year, the ECO decided to highlight the importance of instruments as tools for implementing environmental laws and policies, and to remind Ontario residents that they have the right to participate in government decisions about environmentally significant instruments by using various provisions of the *Environmental Bill of Rights, 1993* (*EBR*).

What is an "Instrument"?

Instruments come in a variety of different forms, and do different things. The following examples illustrate how instruments may be applied in the field.

By granting permission for an activity, such as:

- an Environmental Compliance Approval for an industrial facility to emit air pollutants through its stacks;
- a Permit to Take Water (PTTW) to take large volumes of water from groundwater or surface water sources;
- a licence to operate an aggregate pit or quarry; or
- a permit to cause harm to an endangered or threatened species.

By requiring a person to do (or not do) something, such as:

- an order to a property owner to clean up soil or groundwater contamination; or
- an order to stop the handling, storage, use, disposal, transportation or display of a pesticide.

By approving plans, designations, declarations, and classifications, such as:

- the approval of a municipality's official plans or official plan amendments;
- the designation of planning units to which a community-based land use plan applies under the *Far North Act, 2010*;
- declarations of conformity of by-laws, etc. with the Niagara Escarpment Plan; or
- classifications of pesticides under the *Pesticides Act*.

Instruments and the *EBR*

The *EBR* gives Ontario residents the right to participate in environmental decision making by the provincial government, including decisions about environmentally significant instruments (i.e., instruments that are prescribed in O. Reg. 681/94, the Classification of Proposals for Instruments regulation under the *EBR*). Currently, select instruments issued under 18 acts administered by five different ministries are prescribed. All of the instruments listed in the section above are prescribed under the *EBR*.

Right to Notice and Comment

Ontario residents have the right to be given notice of proposals about prescribed instruments on the Environmental Registry, the right to submit comments on those proposals, and the right to notice of the ministry's final decision. Thousands of instrument notices are posted on the Registry every year, far outnumbering the policies, acts and regulations posted. While some receive little or no public feedback, others elicit hundreds – and, in some cases, thousands – of comments.

Right to Submit Applications

The *EBR* right to submit applications for review and investigation applies to prescribed instruments. Any two Ontario residents may request a review of a prescribed instrument, or request an investigation of an alleged contravention of the terms or conditions of an instrument. Over the years, many Ontario residents have taken advantage of this right. In this reporting year, the ECO reviewed an application requesting a review of a municipality's approval for a sewage works under the *Ontario Water Resources Act* (*OWRA*); the applicants in that case requested the review out of concern that inadequate sewage treatment was adversely affecting local water bodies (for more information on the application, refer to Chapter 1.4 of this Part of this Annual Report).

Right to Appeal

The *EBR* creates a unique and potentially powerful right for any Ontario resident to appeal (i.e., challenge) a ministry's decision regarding a prescribed instrument. In most cases, residents must first obtain leave (i.e., permission) from the appellate body – usually the Environmental Review Tribunal – to appeal. For example, in this reporting year, Ontario residents sought leave to appeal several instrument decisions relating to approvals for air emissions and waste disposal sites.

Ontario residents also directly appealed several decisions relating to instruments prescribed under the *EBR*, including appeals under the *Environmental Protection Act* of decisions to issue renewable energy approvals, and appeals under the *Planning Act* of decisions to approve official plan amendments. Notice of those appeals is posted on the Environmental Registry.

For more information about *EBR* appeals this year, refer to Appendix III of Part 1 of the ECO's 2011/2012 Annual Report.

Statements of Environmental Values

The *EBR* requires prescribed ministries to consider their Statements of Environmental Values (SEVs) whenever making decisions that might significantly affect the environment, including decisions regarding prescribed instruments. SEVs describe how ministries will integrate environmental values with social, economic and scientific considerations when they make environmentally significant decisions. For more information about SEVs and instruments, refer to Chapter 5.0 of Part 1 of the ECO's 2011/2012 Annual Report.

Instruments Reviewed by the ECO This Year

This year, to illustrate the variety and scope of instruments that are posted on the Environmental

Registry for public consultation, the ECO reviewed selected instrument decisions made by each of the five ministries responsible for prescribed instruments. Brief summaries of these instruments and the ECO's comments are provided below; more detailed reviews are found in Section 1 of the Supplement to this Annual Report.

MMAH – Approving a Municipality's Official Plan

Official plans are important documents that provide direction on permissible land uses and activities in a municipality. Under the *Planning Act*, a municipality must ensure its official plan conforms with provincial plans, has regard to matters of provincial interest, and is consistent with the Provincial Policy Statement, 2005 (PPS). Certain official plans and official plan amendments (OPAs) must be approved by the Minister of Municipal Affairs and Housing. Official plans (and OPAs) within this category are prescribed instruments under the *EBR*.

In January 2012, the Ministry of Municipal Affairs and Housing (MMAH) gave notice on the Environmental Registry that it had approved an official plan amendment for the City of Brockville, subject to certain modifications. A section of the amended official plan, entitled Minimizing our Impact on the Environment, included policies regarding: species at risk; fish habitat; natural heritage systems; watershed plans; drains; urban forestry and tree planting; and energy conservation.

ECO Comment

The ECO is pleased that the amended official plan exceeds the minimum standards for environmental protection found in the PPS and, in particular, with the City of Brockville's commitments to natural heritage systems and watershed management planning.

MNDM – Ordering a Mine Closure Plan

The Ross Mine site is a gold, silver and copper mine that opened in 1935 in the small town of Holtyre, Ontario. Although production ceased at the mine in 1990, mine hazards still remain, including: power lines and substations; transformers and polychlorinated biphenyls (PCBs); tailings and dams; open pits; underground mine workings; chemicals; and contaminated soils.

The Ontario government has a long history of trying to get the mine's historic owner – Preston Electrical and Mechanical Ltd. (Preston E&M) – to comply with Director's Orders. As early as 1991, the Ministry of the Environment (MOE) ordered the company to pump out the mine and remove PCB-containing transformers. Over 20 years later, this order has still not been fulfilled. Likewise, the Ministry of Northern Development and Mines (MNDM) has been trying to obtain a certified Closure Plan with financial assurance from the owner for over a decade.

In April 2011, MNDM issued a Director's Order under the *Mining Act* (a prescribed instrument under the *EBR*) to Preston E&M to file a certified Mine Closure Plan for the Ross Mine site by April 2012. In April 2012, MNDM granted an extension of time to comply with the Order until September 30, 2012.

ECO Comment

Given the government's exhausting and unproductive enforcement history with this company and site, and the ongoing threat of environmental harm, the ECO urges MNDM, if Preston E&M fails to meet the extended deadline of September 30, 2012, to consider using more aggressive tools under the *Mining Act* to ensure the site's hazards will be rehabilitated to provincial standards.

MNR – Authorizing Harm to Species at Risk

Under the *Endangered Species Act, 2007*, the Minister of Natural Resources may issue permits that authorize a person to engage in activities otherwise prohibited under the Act. Some of those permits, including some "overall benefit permits" under section 17(2)(c) of the Act, are prescribed instruments under the *EBR*.

In June 2011, the Minister issued an overall benefit permit authorizing the County of Renfrew to harm or harass Blanding's turtle, a threatened species, during construction of a road near Petawawa. The permit requires the County to undertake a number of measures to minimize adverse effects on Blanding's turtles during construction and to provide an overall benefit to the species.

ECO Comment

The ECO concludes that the conditions on this overall benefit permit appear to be fair and balanced, given that the road needed to be maintained. However, the ECO urges the Ministry of Natural Resources (MNR) to undertake and report on follow-up studies on the site to determine whether the actions taken have indeed contributed to the overall benefit of the species, and to consider and track the cumulative impacts of any future permits that affect Blanding's turtles in the region.

MOE – Granting Permits to Take Water

Under the *Ontario Water Resources Act*, users taking more than 50,000 litres of water per day from groundwater or surface water in Ontario generally must apply to MOE for a PTTW. The ministry reviews all PTTW applications, and issues permits with conditions and expiry dates, guided by the Water Taking Regulation (O. Reg. 387/04) and the Permit to Take Water Manual. The vast majority of the over 6,100 active PTTWs in Ontario are clustered in the densely populated south. MOE posts hundreds of notices regarding PTTWs on the Environmental Registry every year, with some garnering significant public attention.

The ECO did not review a specific PTTW issued in this reporting year, but instead undertook a detailed review of MOE's PTTW program itself. To read that review, refer to Chapter 4.2 of this Part of this Annual Report.

TSSA (MCS) – Allowing a Variance from the Liquid Fuels Handling Code

Under the *Technical Standards and Safety Act, 2000 (TSSA, 2000)*, a Director may authorize a "variance" (i.e., deviation) from any regulation made under the Act, including the Liquid Fuels Handling Code, provided "the variance would not detrimentally affect the safe use of the thing to which the regulation ... applies or the health or safety of any person." Variances from a number of clauses of the Liquid Fuels Handling Code are prescribed instruments under the *EBR*, including Clause 3.2.1.3, which requires aboveground storage tanks to be installed at least 30 metres from a waterway.

In October 2011, the Technical Standards and Safety Authority (TSSA), an independent body responsible for administering the *TSSA, 2000* on behalf of the Ministry of Consumer Services (MCS), granted a variance from Clause 3.2.1.3 to allow a 13,600-litre aboveground tank to be installed less than 30 metres from a ditch that may be connected to a waterway. The TSSA based its decision on a number of "equivalent safety" measures proposed by the applicant, such as the use of a double-walled tank.

ECO Comment

The TSSA's decision to issue this instrument seems reasonable, based on the conditions of the approval, including the additional safety measures to protect the waterway described in the Registry notices, as well as the ECO's communications with the TSSA.

ECO COMMENT

Instruments are important and powerful tools for the government, not only to regulate specific activities that may affect the environment, but also to enforce environmental laws. Moreover, because prescribed instruments are open to public participation, Ontarians have the ability to be involved in environmentally significant decisions on a site-specific basis. To recap, thanks to the *EBR*, Ontarians can read about those instruments on the Environmental Registry; they can provide comments; they can seek leave to appeal specific instrument decisions; and they can submit applications for review or investigation related to particular instruments.

Instruments put many of the province's environmental laws, policies and regulations into practice: for instance, an environmental compliance approval should ensure emissions to air are within accepted standards for health and the environment; a PTTW should promote sustainable water use and protect ecosystem functions; an order for a mine Closure Plan should ensure the rehabilitation of a potentially environmentally hazardous mine site. The ECO hopes that shining a spotlight on instruments here will remind the Ontario government – and the public – of the importance of getting instrument decisions right. They are, after all, where the rubber hits the road.

For ministry comments, please see Appendix C.

5.2 | More Amendments to Ontario's Air Quality Regulation

Ontario is home to a wide range of industries that emit pollutants into the air. These air pollutants can contribute to a range of environmental impacts, such as smog, climate change and contamination of lakes and soils. Some contaminants bio-accumulate in the higher trophic levels of ecosystems, affecting fish-eating birds and mammals. Air pollutants also contribute to a host of human health problems – some contaminants, for example, are carcinogenic, while others can contribute to neurological disorders or respiratory illnesses.

Ontario's Air Quality Regulation

Ontario's key mechanism for regulating air emissions from industry is O. Reg. 419/05 (Air Pollution – Local Air Quality), made under the *Environmental Protection Act* (*EPA*). This regulation establishes air standards for over 130 substances by setting limits on the concentration of contaminants that may be present in the outside air beyond the facility's property line (known as the "point of impingement"). Over the past decade, the Ministry of the Environment (MOE) has gradually been updating and developing new air standards for dozens of substances. Each air standard applies to all facilities in the province, across all industry sectors, although existing facilities are generally given five years to come into compliance with new standards.

O. Reg. 419/05 provides facilities with three options for compliance:

1. meet the air standards in the regulation for each discharged contaminant, and prepare an Emission Summary and Dispersion Modelling (ESDM) report that uses modelling to demonstrate the facility's compliance;
2. apply for a site-specific standard; or
3. apply to register under a sector-based technical standard.

The air standards in O. Reg. 419/05 are developed considering only environmental and health protection, with no consideration of whether facilities can meet the standards. To address situations where a facility, or group of facilities in a sector, feasibly cannot meet the regulatory air standards by the phase-in date, O. Reg. 419/05 includes options to obtain a site-specific standard or sector-based technical standard, respectively.

The site-specific standard process allows any facility that cannot technically or economically meet one or more of the generic air standards to apply for a less stringent, individualized standard. A facility applying for a site-specific standard must: submit an ESDM report as well as a feasibility report of available technologies for reducing emissions; hold a public meeting with the local community; and create an action plan for implementing the standard and monitoring progress. As an environmental safeguard, MOE can only approve a site-specific standard if it would not result in the facility frequently exceeding an "upper risk threshold" as defined in the regulation.

The sector-based technical standard process is essentially a streamlined version of the site-specific process for an entire industry sector. Once MOE has created a sector-based standard, any member of that sector can apply to MOE to register under the standard. To date, the ministry has created two sector-based standards: one for the forestry sector and the other for the foundry sector. (For more on the sector-based standards, see Part 4.3 of the ECO's 2009/2010 Annual Report.)

Amendments to the Site-Specific Standard Process

In June 2011, MOE amended O. Reg. 419/05 to refine the site-specific standard process. The stated purpose of the amendments was to increase "regulatory certainty and clarity" and promote "business investment in Ontario." To this end, MOE made the following amendments:

- Change the name from "altered standard" – which industry stakeholders opposed on the basis that it created a perception among the public that they were not complying with O. Reg. 419/05 – to "site-specific standard." This is intended to help businesses communicate to the public that the site-specific standard is a valid compliance option.
- Extend the permitted duration of a site-specific standard from the previous maximum term of five years (or up to ten years in "extenuating circumstances") to a new *minimum* of five years and *maximum* of ten years (without having to demonstrate "extenuating circumstances").
- Remove the requirement for applicants to hold a public meeting when applying for a renewal of a site-specific standard, although MOE may still require applicants to hold a meeting if there have been significant changes since the original application (such as technological or scientific advances or changes in production).

IMPLICATIONS OF THE DECISION

Increased and Longer Reliance on Site-specific Standards

Changing the name, increasing the term of the site-specific standard, and removing the public meeting requirement for renewals (assuming no significant changes), should make the site-specific standard process a more attractive option for industry. The corollary is that the amendments could lead to an increased reliance on the site-specific standard process as a form of compliance with O. Reg. 419/05.

While site-specific standards do require measures to reduce emissions, they allow for overall higher levels of emissions than the generic air standards. Therefore, an increased reliance on site-specific standards by industry means people living near those facilities would experience higher levels of exposure to contaminants, and be subjected to those levels for more years, than if those facilities operated pursuant to the generic standards.

MOE has clearly and repeatedly stated that the site-specific standard is an "interim" solution for facilities unable to meet the generic air standards "with the goal of continuous improvement of emissions over time." In support of this intent, O. Reg. 419/05 initially set a maximum period of five years for site-specific standards (unless there were extenuating circumstances). Lengthening the maximum from five years to ten years, combined with easier renewal (or possibly multiple renewals), erodes the interim nature of the site-specific standard process and weakens the goal of continuous improvement. The longer maximum duration of the standard means a longer period between technology reviews, which could mean a delay before new feasible technologies or processes are implemented.

Decreased Public Engagement

All applications for site-specific standards, including renewals, will continue to be posted on the Environmental Registry. As such, the public will continue to be notified of applications for renewal and will continue to have an opportunity to provide written comments. However, where

MOE does not use its discretion to require a meeting, the public will no longer have the same opportunity to ask questions, obtain additional information and engage directly with the applicant.

PUBLIC PARTICIPATION & *EBR* PROCESS

During the comment period on this proposal, the ministry received 20 comments. The majority of comments were from industry stakeholders who supported the amendments as a step in the right direction, but expressed a desire for further business-friendly amendments to O. Reg. 419/05. For example, one industry group stated that it "continues to advocate for Ontario to set air standards that are attainable technologically and economically, while protective of human health and the environment. Failure to do so .... could discourage investment in Ontario by global organizations since alternative sites are available for investment in other jurisdictions with more regulatory certainty."

Conversely, most other commenters opposed the proposal, viewing the amendments as further weakening the environmental protections provided in O. Reg. 419/05, as well as weakening public participation.

OTHER INFORMATION

In October 2010, the Canadian Council of Ministers of the Environment agreed to a new Canada-wide framework for addressing air quality issues, called the "Air Quality Management System for Canada." The various components of this framework are currently being developed, such as the establishment of "base-level industrial emissions requirements." This Canada-wide initiative could significantly alter Ontario's air regulatory framework, although it is still unclear how the components will eventually be integrated into Ontario's air regulations. The ECO expects that MOE will consult with the public through the Environmental Registry as each of the proposed elements of the framework is developed.

ECO COMMENT

When the ECO reviewed the last round of amendments to O. Reg. 419/05 in our 2009/2010 Annual Report (Part 4.3), the ECO commented:

> *Ontario's general framework for regulating air emissions provides a reasonable and balanced approach. It allows the ministry to set a high bar through its environmental and health-based air quality concentration limits, and then places the onus on facilities to either meet these limits or demonstrate that they cannot due to technological and/or economic barriers. This approach is preferable to setting limits based on what is achievable for all facilities, which would result in standards that reflect the lowest common denominator. This approach also appropriately acknowledges the challenges for certain facilities to feasibly meet all of the regulatory air quality standards.*

This position still holds true. However, as the ECO has cautioned in the past, in order to protect the environment and public health, MOE must be judicious about the use of alternative standards. MOE should only approve site-specific standards when compliance with the generic air standards is truly not feasible.

The ECO recognizes that some air standards may not be technically achievable for all facilities and, thus, site-specific standards constitute a legitimate means of complying with O. Reg. 419/05. Amending the regulation to try to make the site-specific standard process function better is reasonable.

However, MOE must ensure that the periodic tweaking of O. Reg. 419/05 does not constitute a gradual watering down of the regulatory framework for air quality in response to industry pressure. Industry stakeholders continue to advocate for permanent site-specific standards and a general move away from the health and environment-based generic standards approach. Such a shift, if accepted, would represent a significant step backwards in the regulation of Ontario's air quality.

The site-specific standard process is supposed to be an interim measure. Yet, given the usual five-year phase-in for new generic standards before a site-specific standard even begins, with a maximum ten-year term, and a simplified renewal process that could extend the site-specific standard an additional ten years, one can easily conceive of facilities being given a 25-year (or longer) grace period before they are required to meet a new or updated air standard. To meet the ministry's stated goal of continuous improvement, the ECO urges MOE to ensure that the renewal application process for a site-specific standard remains rigorous.

Finally, the ECO encourages MOE to use its discretion liberally to require public meetings for renewal applications. While the Environmental Registry provides important notification and comment opportunities, a public meeting enhances the opportunity for dialogue and supports fuller public participation.

For a more detailed review of this decision, please refer to Section 1.4 of the Supplement to this Annual Report. For ministry comments, please see Appendix C.

5.3 | MOE Failure to Stop Pollution

Essroc Canada, Inc. ("Essroc") is one of the largest cement producers in southern Ontario. Its facility, located north of the Town of Picton, quarries raw materials and produces and ships cement. In July 2011, residents living near the facility ("the applicants") submitted an application for investigation to the Ministry of the Environment (MOE) asserting that the facility was a problem polluter. They complained of hard-to-remove dust particles covering their cars, outdoor furniture and windows, and claimed that on numerous occasions over the years, they had observed "catastrophic occurrences" at the facility, such as an ash cloud "that looked like a volcano had erupted."

The applicants alleged that the facility is discharging contaminants into the air resulting in an adverse effect contrary to section 14 of the *Environmental Protection Act (EPA)* and section 45 of O. Reg. 419/05 (Air Pollution – Local Air Quality) under the Act. They further accused MOE of "gross inaction" and of failing to enforce its own laws and regulations.

To support their application, the applicants cited past ministry air quality investigations (2008-2010) that confirmed the cement operations resulted in dust deposition and damaged surfaces and increased particulate concentrations in the air. MOE's reports concluded that "residents' complaints are credible and truthful" and "all evidence supports residents' complaints of adverse effects." The reports documented these effects occurring as far as five kilometres from the facility. The reports recommended the ministry "take action" to require Essroc to reduce its particulate emissions and the resulting adverse effects, and address all contraventions of the air quality standards.

The applicants stated that staff from MOE's Belleville office told them that Essroc had approximately 700 exceedances between February and August of 2010. The applicants also claimed that, in response to queries why MOE had not forwarded the reports to its Investigations and Enforcement Branch (IEB) to determine if charges would be laid, ministry staff said that MOE was using other measures to bring Essroc into compliance. Furthermore, the applicants alleged that the ministry's IEB Supervisor of Enforcement in Kingston informed them that he was unaware of these reports until after the two-year limitation period to prosecute an offence under the *EPA* had expired.

The applicants also claimed that the baghouse installed in kiln 3 was damaged and no longer used to reduce particulate emissions, and that Essroc was using kiln 4, which did not yet have any pollution prevention devices installed.

MINISTRY RESPONSE

MOE conducted an investigation of the applicants' claims, which it completed in November 2011. The ministry stated that since 2003, it had been notified 27 times by residents of adverse effects from fugitive dust from the facility. The ministry acknowledged these adverse effects were "clearly documented" in the 2008 and 2010 suspended particulate surveys, and confirmed that dust emissions from the facility caused "one or more of the prohibited effects" outlined in O. Reg. 419/05. However, MOE claimed that ministry efforts have produced positive results – including measures by Essroc to: improve its housekeeping activities to suppress dust; update its Best Management Practices Plan; and complete a Technology Benchmarking Report. Further, MOE stated that it expected further improvements as Essroc implements site improvements identified in the Technology Benchmarking Report and completes the addition of a baghouse on Kiln 4 to enhance its emission controls.

MOE refuted allegations that it failed to adequately enforce the regulatory requirements imposed on Essroc. Instead, MOE asserted that the responses of the Belleville staff were "thoughtful and appropriate" and followed the ministry's 2007 Compliance Policy: Applying Abatement and Enforcement Tools (the "Compliance Policy"). The ministry explained that since 2005, six referrals were made to the IEB, and Belleville abatement staff had "required Essroc to take action" to address emissions. The ministry did not specify the nature of the required action in its response to the applicants. MOE also explained that between 2008 and 2010, it undertook three suspended particulate surveys, which confirmed adverse effects from the facility. The first survey was forwarded to the IEB in June 2008, but the file was closed in May 2009 without pressing charges. With respect to the second and third surveys, completed in May and September 2010, MOE stated there was "insufficient time to complete an investigation" and forward the results to the Crown before the limitation period expired.

The ministry highlighted its most recent "mandatory" measure, the issuance of a non-appealable Section 27.1 Notice (under O. Reg. 419/05) in March 2011 that required Essroc to undertake a Technology Benchmarking Review of available technologies to abate fugitive dust.

For the full text of the ministry's decision, see our website at www.eco.on.ca.

ECO COMMENT

The ECO sympathizes with the applicants' frustrations: despite repeated complaints, they have lived for years with cement dust covering their properties and affecting their air quality. MOE's response confirms that the ministry has known for almost a decade that Essroc's fugitive emissions were causing adverse effects for area residents. The ECO is deeply disturbed by what appears to be an exceedingly slow and weak response by MOE in the face of a facility's chronic non-compliance with environmental laws and regulations. Unfortunately, the lack of details in MOE's response to the applicants regarding what voluntary and mandatory actions it has required Essroc to perform, makes it extremely difficult for the ECO to evaluate the reasonableness of MOE's response.

However, the simple fact that the emission problems continue to adversely affect residents after a decade is, in itself, sufficient evidence that MOE has not taken adequate measures in this case. MOE's Compliance Policy outlines the abatement and enforcement tools the ministry should use to address violations of MOE-administered legislation. Each incident is evaluated using the policy's Informed Judgment Matrix to determine the appropriate enforcement response, based on factors such as compliance history and the environmental and health consequences of the violation. Accordingly, reported incidents at the Essroc facility would be classified as "Compliance Category II," since the facility had previous/ongoing violations not resolved despite ministry directions and since fugitive dust has minor health/medium environmental consequences. For matters falling in this category, the Compliance Policy recommends stronger mandatory application of tools, such as Orders, Environmental Penalty Orders, use of *Provincial Offences Act* tickets, and IEB referral consideration. Furthermore, according to the Compliance Policy, failure to adhere to measures and timelines outlined in a voluntary abatement plan could result in an Order, direction or notice being issued. The Compliance Policy states that "in no case, will the Ministry tolerate unsatisfactory progress on a voluntary abatement plan beyond six months." It appears that in this case, MOE tolerated unsatisfactory progress for years.

The ECO wonders how many environmental prosecutions are not commenced because MOE cannot complete the background work within the limitation period for laying charges, as was the case with Essroc. It is unacceptable for MOE to let polluters continue polluting because it cannot complete its investigation on time. The ministry should assess its investigative capacity and determine whether it is necessary to increase ministry capacity and/or examine the sufficiency of the limitation period in the *EPA*.

Even though a facility may play an important economic role in a community, it should not be allowed to do so at the expense of residents and the environment. MOE is responsible for creating environmental laws and regulations and for enforcing any breaches of these laws. At a minimum, the ECO would have expected the ministry to respond to Essroc's fugitive dust emissions by issuing the facility a Control Order – defined by MOE's Compliance Policy as "one of the primary mandatory abatement tools available to the Ministry to respond to an incident." The ECO strongly urges MOE to immediately take appropriate and necessary action to remedy the adverse effects from fugitive dust emissions emitted by the Essroc facility.

For a more detailed review of this application, please refer to Section 3.1.3 of the Supplement to this Annual Report. For ministry comments, please see Appendix C.

CHAPTER 6.0

MOVING GOVERNMENT FORWARD

In last year's Annual Report, the ECO pointed out several examples where the Ontario government has failed to engage solutions to advance environmental protection and stewardship. Indeed, politics, ignorance, fear and inertia often prevent governments, companies and even individuals from implementing new ideas, and questioning whether their traditional practices are working. In this Chapter of the Annual Report, which focuses on moving the government forward, the ECO encourages the province to muster the momentum to implement promised ideas, consider new solutions, and evaluate the effectiveness of old ones.

For over a decade, the ECO has repeatedly recommended that the Ministry of Education (EDU) be prescribed under the *Environmental Bill of Rights, 1993*, in order to advance public scrutiny and ECO oversight of environmentally significant decision making. In this Chapter of the Annual Report, the ECO re-examines the need to prescribe EDU. Likewise the ECO looks at what, if any, progress the government has made in developing legislation to protect the public from "SLAPP suits" (strategic lawsuits against public participation), which can intimidate, punish and silence citizens voicing legitimate environmental concerns.

While slow progress has been made on these two fronts, the Ministry of Transportation (MTO) has laudably released a strategy to incorporate sustainability into MTO's internal business practices, as well as policies and programs that affect Ontario's transportation system. In this Chapter of the Annual Report, the ECO evaluates this strategy and its ability to advance the sustainability of both the ministry's own practices and transportation in the province.

Finally, the ECO highlights the importance of evaluating the effectiveness of environmental programs. Some of Ontario's environmental programs were established decades ago — and some have changed significantly over time — with little assessment of their performance. In drawing attention to this issue and describing the methodology of program evaluation, the ECO hopes to open a dialogue with ministries and inspire them to apply this tool.

6.1 | Unfinished Homework: Prescribing the Ministry of Education under the *EBR*

Schools have a unique opportunity to instil students with environmental knowledge and an appreciation for nature as they mature into contributing citizens. Environmental education and exposure to nature can: improve the public's understanding of complex environmental issues that affect their lives; increase students' appreciation of the value in protecting natural heritage; and shape individuals' energy, water and material consumption patterns.

Moreover, schools and school boards, with their enormous built infrastructure and transportation fleets, represent considerable consumers of resources and producers of waste. Schools and their boards, therefore, have substantial direct and indirect impacts on the environment.

In Ontario, the Ministry of Education (EDU), as the administrator of Ontario's education system, plays a pivotal role in advancing the environmental education of Ontario's students and managing schools' impacts on the environment.

Environmental education is education *about* the environment, *for* the environment, and *in* the environment. Environmental education promotes an understanding of, rich and active experience in, and an appreciation for the dynamic interactions of:

- the Earth's physical and biological systems;
- the dependency of our social and economic systems on these natural systems;
- the scientific and human dimensions of environmental issues; and
- the positive and negative consequences, both intended and unintended, of the interactions between human-created and natural systems.

From: Shaping Our Schools, Shaping Our Future, the report of the Working Group on Environmental Education, June 2007.

Greening Ontario's Education System

Over the past few years, EDU has commendably worked toward minimizing the environmental footprint of Ontario's school system. In particular, the ministry's Energy Management and Conservation Initiative involves a number of projects to reduce the education sector's energy consumption, increase renewable energy use, and promote green technologies and products. This initiative includes:

- Appointing an **Energy Conservation Officer** to assist school boards in meeting the requirements of the *Green Energy Act, 2009* and to identify and promote best practices in energy management, conservation and procurement;
- Creating the position of **Incentive Programs Advisor** to help match a school board's energy-efficiency projects with available incentive funding;

- Establishing a **Utility Consumption Database** to automatically collect energy consumption data on every school and administrative building in the education sector in order to identify high- and low-performing schools/boards, determine best practices and set energy reduction targets (the ECO intends to review this database in a future Annual Energy Conservation Progress Report);
- Piloting, in partnership with the Ministry of Research and Innovation, a variety of innovative green products and technologies (e.g., green thermostats, programmable energy saving lighting controllers, energy efficient transformers, on-site wastewater treatment systems, greywater treatment systems, and renewable energy generation and conservation projects) in over 150 Ontario schools and 40 boards through the **Green Schools Pilot Initiative**;
- Conducting energy audits, installing energy efficient heating/cooling systems and reconfiguring existing school spaces to improve the energy efficiency of more than 2,600 schools via the $550-million two-year **Energy Efficient School** program;
- Investing $50 million in **Renewable Energy Funding** to implement 135 renewable energy projects in 126 schools;
- Publishing the **Green Schools Resource Guide** (January 2010) to help school boards plan, design and build energy efficient green schools; and
- Releasing the **Green Clean Program Resource Guide** (March 2010) to help school boards adopt and implement programs that increase the use of environmentally responsible cleaning products in schools.

In August 2011, EDU released a comprehensive inventory of existing green capital initiatives undertaken in Ontario's 72 district school boards. This inventory documents the range and trends of green technologies that have been implemented, allowing successes and challenges to be identified.

Photo credit: Ontario EcoSchools

Meanwhile, EDU has also advanced environmental education. In March 2007, the government established the Working Group on Environmental Education in Ontario schools. The Working Group's final report, Shaping Our Schools, Shaping Our Future, recommended that EDU collaborate with other relevant ministries to develop a comprehensive provincial policy on environmental education.

The government responded that it would move forward on the report's 32 recommendations, and in 2009, EDU released Acting Today, Shaping Tomorrow: A Policy Framework for Environmental Education in Ontario Schools (the "Policy Framework"). The Policy Framework sets three goals organized around: teaching and learning, student engagement and community connections, and environmental leadership. The Policy Framework also outlines implementation strategies and provides examples of indicators to measure progress.

In this Policy Framework, EDU committed to embedding environmental education expectations and opportunities in all grades and subjects of the Ontario curriculum, as appropriate, and ensuring that the ministry's Standards for Environmental Education in the Curriculum are applied to curricula in all subjects and disciplines during the revision and development process. EDU also provides funding to Ontario EcoSchools, an environmental education and certification program established by a consortium of education stakeholders to help school communities develop ecological literacy and environmental practices.

Including biodiversity lessons and outdoor education in Ontario's curricula also will help the Ontario government fulfil Canada's commitment to achieving the first Aichi Biodiversity Target (established under the 1992 United Nations Convention on Biological Diversity): ensuring that "people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably."

Photo credit: Ontario EcoSchools

Prescribing EDU under the *EBR*

Despite EDU's greening achievements, there are always opportunities to improve the environmental sustainability of Ontario's education system. Ideas for further greening could come from industry, other jurisdictions, non-government environmental organizations, and the public. One of the overarching purposes of the *EBR* is to provide Ontarians with a way to participate in — and hold the Government of Ontario accountable for — environmentally significant government decision making. Since decisions made by EDU can be environmentally significant, prescribing EDU under the *EBR* is important to advancing the *EBR*'s goal. Unfortunately the road to prescribing EDU has been long and arduous.

It began in 1998, when — due to low enrollment — EDU removed two optional Environmental Science courses from Ontario's secondary school curriculum. To reach more students, the ministry decided to integrate (or "infuse") environmental concepts into compulsory and optional Science courses. In 1999, Lakehead University professor Dr. Thomas Puk and a co-applicant submitted an application for review requesting that EDU be prescribed under the *EBR* so that they could request a review of this decision (see pages 165-166 of the ECO's 2000/2001 Annual Report). The Ministry of the Environment (MOE), which administers the *EBR*, agreed to undertake the application, but ultimately concluded that the purposes of the *EBR* would not be furthered by making EDU subject to the Act. The ECO disagreed with MOE's conclusions, particularly its position that because members of the public can write letters to the Minister of Education requesting changes to policies, EDU does not need to be prescribed for applications for review. The ECO argued that the right to mail a letter to a minister is not a reasonable replacement for the right to request a review under the *EBR*, which is a much more transparent, public process that includes timelines, oversight by the ECO, and accountability to the Ontario Legislature and the public. Therefore, the ECO recommended that MOE re-examine the need to prescribe EDU under the *EBR*.

Undeterred, in 2004, the two applicants submitted a second request for review, alerting the ministry to new research that showed a decline in environmental literacy in Ontario and determined the "infusion model" to be a failure (see pages 123-128 of the ECO's 2005/2006 Annual Report). After undertaking the review, MOE recommended that EDU be subject to the

Statement of Environmental Values (SEV) provisions of the *EBR*, which require prescribed ministries to prepare an SEV and to consider its principles when making environmentally significant decisions. MOE recommended, however, that other *EBR* provisions — including those regarding consultation on the Environmental Registry, and the application for review processes — should not apply to EDU. Following up on its recommendation, in November 2005 MOE posted a regulation proposal on the Environmental Registry (#RA05E0016), proposing to amend O. Reg. 73/94 made under the *EBR* to make EDU subject to the SEV provisions of the *EBR*.

The ECO reviewed this application in our 2005/2006 Annual Report and found MOE's recommendation disappointing and perplexing. While the ECO lauded the prescribing of EDU for SEV consideration as an important first step, the ECO found MOE's recommendation highly unusual, since no other ministry, including those with more minimal environmental protection mandates, has ever been prescribed only for SEV consideration. The ECO noted that, to date, all prescribed ministries have been prescribed for SEV consideration and for posting proposals for new policies, acts and regulations on the Environmental Registry — basic elements of the new system of accountability and transparency developed by the Task Force on the *Environmental Bill of Rights, 1993* in 1992. The ECO recommended that the Ontario government move quickly to prescribe EDU and consider making the ministry subject to a broader range of *EBR* rights.

Without posting a decision notice for its November 2005 regulation proposal, in March 2011, MOE posted another regulation proposal notice on the Environmental Registry (#011-2697), this time proposing to make EDU subject to both the SEV and public consultation provisions of the *EBR*. This new regulation proposal, however, still did not propose making EDU subject to applications for review. In August 2012, MOE amended O. Reg. 73/94, prescribing EDU under the *EBR* for SEV consideration and public consultation.

Implications of EDU Being Prescribed Under the *EBR*

Within three months of being prescribed under the *EBR*, EDU will have to prepare — and post on the Registry for public comment — a draft SEV that explains: how the purposes of the *EBR* are to be applied when EDU makes environmentally significant decisions; and how consideration of the *EBR*'s purposes should be integrated with other considerations, including social, economic and scientific ones. Within nine months of MOE amending O. Reg. 73/94, the Minister of Education must finalize EDU's SEV.

Although SEVs are ministry-specific, they all generally contain commitments to: apply the purposes of the *EBR*; integrate environmental concerns with other considerations; provide opportunities for the public and Aboriginal peoples to participate in environmentally significant decision making; and reduce the ministry's environmental footprint. Examples of this last commitment include: greening the operations of the ministry and sectors where the ministry provides policy direction or programs; reusing older buildings; minimizing paper use and travel for meetings; conserving energy; and encouraging staff to divert materials from disposal. Commitments in EDU's SEV could, therefore, include integrating environmental considerations into curriculum development and continuing to reduce the ministry's environmental footprint.

As a prescribed ministry, EDU is now required to post proposals for environmentally significant policies and acts on the Environmental Registry for a public comment period of at least 30 days and, subsequently, post notice of the ministry's final decisions on those proposals. Recent

EDU policy documents that would have been appropriate for posting on the Registry for public comment include the Green Schools Resource Guide, the Green Clean Program Resource Guide, and EDU's Acting Today, Shaping Tomorrow: A Policy Framework for Environmental Education in Ontario Schools. Because the *EBR* excuses ministries from posting proposals on the Registry that are "predominantly financial or administrative in nature," and because ministries can harmonize Registry consultations with existing policy review processes within the ministry, the burden on EDU to consult using the Registry will likely be minimal. Yet, requiring EDU to consider its SEV and post Registry notices for environmentally significant decisions will allow ECO oversight and increase government accountability and transparency to the public.

Implications of EDU Not Being Prescribed for Applications for Review

The government's decision not to prescribe EDU for applications for review means that concerned citizens are still unable to request an *EBR* review of EDU's decisions about Ontario's environmental science curriculum. Likewise, Ontarians are unable to request a review of EDU's acts, policies or regulations, or lack thereof, that relate to the environment (such as schools' energy efficiency, green purchasing, schoolyard gardens, green roofs, etc.). Again, not prescribing EDU for reviews limits public input, excludes the government's handling of public requests from ECO oversight, and lessens government accountability and transparency.

ECO COMMENT

The ECO has recommended that EDU be prescribed under the *EBR* twice before. The ECO applauds MOE's decision to finally prescribe EDU for SEV consideration and public consultation via the Registry. Six years have gone by since this dialogue began, and the government's slow progress on these matters has not only delayed public participation and ECO oversight of EDU's environmentally significant decisions, but also undermined public confidence in the government's commitment to uphold the purposes of the *EBR*.

Furthermore, although the ECO applauds EDU for the variety of initiatives it has undertaken to green the ministry and incorporate environmental education into Ontario's curriculum, there are always opportunities for improvement, and the public education system can only benefit from new ideas and input from the public. The government's refusal to prescribe EDU for applications for review shrouds environmentally significant decisions from ongoing public scrutiny, accountability and ECO review, thwarting the public's ability to exercise the rights intended under the *EBR*. The ECO re-emphasizes its 2005/2006 recommendation and urges the Ontario government to promptly prescribe EDU not only for SEV consideration, notice and consultation on the Environmental Registry, but also applications for review.

6.2 | Anti-SLAPP Legislation Nowhere in Sight

Picture this: a new large-scale development project is proposed for your community, and you are worried about the potential impacts of the project on the environment. You attend a public information session about the proposal and ask some tough questions of the developer or voice strong opinions. Perhaps you encourage your neighbours to join you in opposing the project. Maybe you place a sign on your lawn, organize a group of concerned citizens, circulate a petition or write letters to the editor of the local newspaper expressing your views on the project. The next thing you know, you are served with a multi-million dollar lawsuit by the developer. You don't want to back down, but you don't have the resources to defend the lawsuit, so what choice do you have?

You've just been SLAPPed.

Defining the Problem

A "SLAPP suit" (strategic lawsuit against public participation) is a civil action brought without merit against citizens or organizations to stifle public participation in a matter of public interest. SLAPP suits, which are usually advanced as defamation suits, may be intended to intimidate, punish, divert or deplete the resources of, and — most importantly — silence citizens engaged in legitimate public discourse.

In our 2008/2009 Annual Report (see pages 23-25), the ECO drew attention to the imbalance of power in planning disputes between developers and local residents who oppose development proposals in their communities. We identified a need for provincial legislation that would put both sides of development disputes on equal footing and halt SLAPP suits in their tracks. The ECO called on the Ministry of Municipal Affairs and Housing (MMAH) to "take the lead in developing legislation to discourage developers from using cost applications and similar tactics to frustrate public participation in the planning approval process."

Progress: the Anti-SLAPP Advisory Panel

In May 2010 — just months after the ECO released our report recommending the development of anti-SLAPP legislation — Ontario's Ministry of the Attorney-General (MA-G) announced that it had convened a three-person Anti-SLAPP Advisory Panel (the "Panel"). The Panel was tasked with reporting to the government on "how the Ontario justice system should be designed to prevent the misuse of the courts and other agencies of justice without depriving anyone of appropriate remedies for expression that goes too far."

The Panel invited written submissions from the public and held two meetings to allow the public to make oral presentations. The Panel received submissions from 31 organizations and individuals, and heard eight oral presentations. The Panel reported that 27 of the 31 submissions received (one of which was signed by 46 individuals and organizations) "supported the introduction of specific legislation against SLAPPs."

The Panel's 26-page report was released on December 21, 2010. The Panel recommended that Ontario enact anti-SLAPP legislation, stating that:

> *The Panel was persuaded that threats of lawsuits for speaking out on matters of public interest, combined with a number of actual lawsuits, deter significant numbers of people from participating in discussions on such matters. The Panel believes that the value of public participation ... is sufficiently weighty that the government should take active steps to promote it by enacting targeted legislation.*

The report provides specific advice on the content of such legislation, including recommendations about the scope of activity that should be protected, a multi-step test for identifying a SLAPP suit, and appropriate remedies and defences.

ANTI-SLAPP LAWS: NOT A NOVEL IDEA

Anti-SLAPP legislation is nothing new; it has existed in other jurisdictions for years. Roughly half of American states have enacted some form of anti-SLAPP legislation. In Canada, however, Quebec is currently the only province with an anti-SLAPP law; that province's *Code of Civil Procedure* was amended in 2009 to allow the courts to impose penalties on those who use the courts for SLAPP-type purposes.

British Columbia enacted anti-SLAPP legislation in 2001, but it was quickly repealed following a change in government. Other provinces have introduced anti-SLAPP bills, but never passed them into law; most recently, a private members' bill introduced in the Ontario Legislature in late 2008 (Bill 138, the *Protection of Public Participation Act, 2008*) never made it past First Reading.

To address the issue of abusive lawsuits, such as SLAPPs, the Uniform Law Conference of Canada adopted a *Uniform Prevention of Abuse of Process Act* in 2010; the purposes of that model law are "to prevent the improper use of the legal system" and "to promote the exercise of the freedom of expression by discouraging proceedings that risk hampering or inhibiting public participation." To date, no jurisdiction in Canada has adopted the model statute.

What Next?

Almost two years since the Panel's report was released, barely a whisper has been heard from the government about its next steps. When the report was released, MA-G stated that the ministry "will review the report and the recommendations of the panel," and that it continued to welcome public input. On enquiry to MA-G in early 2012, the ECO was simply informed that the ministry continues to study the report. It is not clear what role, if any, MMAH might play in ensuring that any anti-SLAPP legislation (or other measures) introduced by the government addresses problems in the planning context, such as those the ECO identified in 2008/2009.

In February 2012, the chairs of the Ontario Bar Association's (OBA) environmental law, municipal law and civil litigation sections wrote to the Attorney General to express the OBA's support for the Panel's report (subject to two minor issues regarding costs awards). The OBA urged the Attorney General to adopt the Panel's report and introduce anti-SLAPP legislation in Ontario, noting that the Panel has provided Ontario with "an effective blueprint" for "protecting legitimate legal rights while avoiding the chill on public participation and drain on public resources that ill-motivated law suits can exact."

ECO COMMENT

The ECO is discouraged that this initiative, which had so much initial momentum, seems to have stalled. There is clearly public appetite for legislation to protect against SLAPP suits, and the Panel laid a firm groundwork for the government to move forward.

Public participation is a fundamental component of a democratic society and is worthy of protection. Ontario recognized this in enacting the *Environmental Bill of Rights, 1993 (EBR)* almost 20 years ago. The ECO hopes that the province is carefully considering the Panel's recommendations and that it develops and implements an action plan without further delay.

Anti-SLAPP legislation will no doubt be of great interest to the *EBR*'s wide range of stakeholders. The ECO urges MMAH and the Ministry of the Environment to work with MA-G (which is not prescribed under the *EBR*) to ensure notice of any proposed anti-SLAPP legislation (or similar measures) is posted for full public comment on the Environmental Registry. It would only be fitting.

6.3 | The Ministry of Transportation's Sustainability Strategy

The Ministry of Transportation's (MTO's) mandate covers a number of environmentally significant activities, including: establishing and maintaining provincial highways; purchasing and using aggregates and other construction materials; salting roadways; managing stormwater on provincial highways and roads; and reducing the transportation sector's greenhouse gas emissions and impacts on biodiversity and wildlife habitat. Given these responsibilities, it is extremely important that MTO consider environmental sustainability.

In 2008, MTO began a ministry-wide, collaborative process to develop a sustainability strategy. In February 2011, MTO released the resulting strategy, Sustainability inSight: An Innovative Strategy for Ontario's Ministry of Transportation (the "Strategy"). The purpose of the Strategy is to incorporate sustainability into the ministry's internal business practices, as well as the policies and programs that affect Ontario's transportation system.

In developing the Strategy, MTO established seven strategic goals:

1. Increase accessibility (the ability to reach goods, services, activities and destinations) by improving mobility (the movement of transportation modes), choice of transportation modes, and safety.
2. Integrate transportation and land use planning to reflect sustainability.
3. Consistently apply a context-sensitive approach in MTO's work.
4. Optimize infrastructure design, capacity and investment.
5. Demonstrate good stewardship.
6. Engage MTO staff expertise to promote innovation.
7. Drive a cultural shift towards sustainability.

Under each of these strategic goals, the Strategy identifies many "areas of focus," including:

- Establish a multimodal transportation network, with effective intermodal connections, to reduce the reliance on any one transportation mode.

- Bring a stronger sustainability perspective to the transportation planning process to balance business and passenger transportation needs, manage sprawl and congestion, protect natural and agricultural lands, and promote more active forms of transportation.
- Make every effort to conserve, reuse and recycle finite and shared natural resources as much as possible.
- Minimize disruptions to the natural environment and to historic/cultural features.
- Use MTO's purchasing power to influence the availability of sustainable goods and services.

The Strategy directs that the strategic goals will be reached by completing specific actions, which will be articulated in a yet-to-be-developed Sustainability Implementation Plan (SIP). Each action will have a target completion date and will specify the MTO branch(es) responsible for delivering on it. SIPs will be updated every three years, and each new plan will introduce new actions, report on earlier actions, and indicate MTO's progress toward achieving the Strategy's goals.

IMPLICATIONS OF THE DECISION

The ECO has previously identified many environmental challenges within Ontario's transportation sector, including:

- The need to integrate land use planning and transportation (see pages 28-35 of the ECO's 2006/2007 Annual Report);
- The bias of MTO's Class Environmental Assessment for Provincial Transportation Facilities ("Class EA") toward roads and highways rather than transit, rail and demand management (see pages 112-116 of the ECO's 2004/2005 Annual Report), and the tendency for EA processes to lead inexorably to the approval of projects (see Part 2.2 of the ECO's 2007/2008 Annual Report);
- The ecological impacts of roads, specifically animal strikes, the contamination of streams with road-related pollutants, the spread of invasive non-native species, and the fragmentation, loss and disruption of wildlife habitat (see pages 136-139 of the ECO's 2006/2007 Annual Report and Part 8.1 of the ECO's 2007/2008 Annual Report); and
- The enormous amounts of aggregates used to build and maintain Ontario's transportation infrastructure (see pages 29-35 of the ECO's 2002/2003 Annual Report).

Although the Strategy does not itemize every potential environmental issue — or provide much background and guidance on how environmental impacts can be mitigated — many of the ECO's concerns appear to fall under the numerous and wide-ranging "areas of focus" listed throughout the Strategy, suggesting that these issues will be addressed by action items in SIPs. On the other hand, because it is difficult to glean from the Strategy's goals and areas of focus exactly what action items will be specified in the first SIP, it is possible that some environmental issues may fall between the cracks. While the Strategy appears to set MTO on a commendable path towards sustainability, the Strategy's adequacy as a guidance framework will depend on the content and implementation of the SIPs.

Often, government strategies lack clear objectives, frameworks, and timelines for implementation. By contrast, the Strategy's clear process for achieving high-level strategic goals increases public confidence that progress will be made. Deadline-specific action items will be detailed in SIPs and implemented by MTO working groups and project teams, with the progress made toward the Strategy's goals reviewed and publicly reported on a three-year cycle.

PUBLIC PARTICIPATION & *EBR* PROCESS

In October 2009, MTO posted a policy proposal notice on the Environmental Registry soliciting public input on the development of a sustainability strategy. Although the notice did not include a draft of the Strategy itself, to guide public feedback a link was provided to a seven-page overview of the Sustainability Strategy. During the 45-day comment period, MTO received four comments. The comments were generally supportive of the Sustainability Strategy and MTO's efforts to integrate sustainability into the ministry's policies, programs, day-to-day business practices and decision-making processes. Commenters, however, offered several suggestions to improve MTO's approach, including the following:

- Revise the Sustainability Strategy to make the relationship between transportation and public health more explicit.
- Ensure that transportation planning involves other ministries, environmental non-government organizations and agencies (e.g., the Ontario Municipal Board).
- Incorporate active transportation in the design of interchanges and highways, since these roads often pose barriers to pedestrians and cyclists.
- Reduce the time between progress evaluations from three years to one — at least in the first decade of implementation — to attempt to reduce the impacts of pending environmental catastrophes, such as severe global warming and biodiversity loss.
- Replace the Sustainability Strategy's goals — which some commenters consider vague and intangible — with measurable goals (such as decreasing fossil fuel consumption by a specific amount) and target completion dates.

In its decision notice, MTO indicated how it had addressed the received comments. For example, MTO modified the Sustainability Strategy to: emphasize the association between sustainable transportation and healthy communities; and reflect the need for MTO to work with other ministries and other stakeholders to achieve a more sustainable transportation system. In response to the concern that the Strategy's goals are vague and immeasurable, the ministry reiterated that the intent of its seven strategic goals is to provide a long-term vision for MTO, and that measurable targets will be identified through specific action items outlined in SIPs. The ministry noted that MTO directors will be responsible and accountable for delivering individual sustainability action items, and progress will be publicly reported in the three-year SIPs.

ECO COMMENT

In 2006, the ECO recommended that MTO collaborate on a strategy to reduce the environmental impact of Ontario's transportation sector. The ECO applauds MTO for developing the Strategy and endeavouring to make the ministry and Ontario's transportation system more sustainable.

The Strategy has the potential to be a powerful change agent, encouraging MTO staff to consider the environment and sustainability in the ministry's decision making. While the strategy itself simply outlines MTO's strategic process, the ECO looks forward to reviewing the first SIP, which the ECO hopes will clearly articulate actions and targets to reduce the environmental impacts of transportation in the province.

The ECO is disappointed, however, that the Strategy fails to explicitly prioritize public transit and rail travel over the use of automobiles. The Strategy does mention that MTO will identify ways to eliminate the need for some trips, provide access to various transportation options, establish a multimodal transportation network to reduce reliance on any one transportation mode, and use transportation demand management to reduce reliance on single-occupant vehicles. But some other jurisdictions and regional plans have been more progressive in giving a clear priority to transit. The ECO has criticized MTO before for prioritizing highway construction over the building and maintenance of rail infrastructure (see page 173 of the Supplement to the ECO's 2006/2007 Annual Report). As the Strategy will guide MTO's decision making and inform the action items articulated in SIPs, the Strategy should make the prioritization of public transit unambiguous.

The ECO notes that MTO's efforts to address sustainability will be inconsequential if the ministry (and the Ontario government at large) overlooks the failings of overarching processes and legislation to protect the environment from the impacts of transportation. In particular, the ECO believes that incorporating long-term environmental sustainability into MTO's Class EA is of utmost importance, given that (as the *de facto* planning and approval mechanism for Ontario's provincial highway network) the Class EA represents one of the most environmentally significant — and criticized — components of MTO's mandate. Likewise, MTO's intentions to minimize disruptions to the natural environment and to integrate transportation and land use planning will be undermined if the government continues to allow exemptions in land use policies (e.g., the Provincial Policy Statement, 2005) and plans (e.g., the Greenbelt Plan) that allow transportation infrastructure in provincially significant wetlands and protected natural areas.

Nevertheless, the ECO reiterates that the Strategy is a commendable first step toward advancing the sustainability of the ministry and the province's transportation system. The Strategy's comprehensive goals and wide-ranging areas of focus lay out a framework under which any and all environmental concerns could be addressed. The ECO looks forward to seeing whether the first SIP fully captures and articulates the enormous potential promised by the Strategy.

For a more detailed review of this decision, refer to Section 1.19 of the Supplement to this Annual Report.

6.4 | Evaluating Environmental Programs: Aiming for Outcomes

When the Ontario government commits to cutting the province's greenhouse gas emissions by a certain amount and sets a deadline, the question naturally arises, "Are we getting there?" The same question arises when goals of any kind are set — whether to divert a certain percentage of waste from landfill, or to conserve the Oak Ridges Moraine, or to protect the endangered American eel. It is reasonable to ask whether the existing suite of programs can actually deliver the desired outcome. Are the right programs tackling the right problems? Are additional interventions needed? Are unexpected dynamics thwarting expectations? Are programs working at cross-purposes? All too often, those questions cannot be answered, because programs are not evaluated.

The *Environmental Bill of Rights, 1993* asserts that the people of Ontario should have the means to ensure that environmental protection "is achieved in an effective, timely, open and fair manner." Recognizing that imperative, the ECO has many times drawn attention to provincial programs that operate — sometimes for decades — without adequate evaluation (see Table 6.4.1).

Table 6.4.1. Examples of the Weak Evaluation of Ontario Environmental Programs
(Source: Past ECO Reports)

PROGRAM	MINISTRY	ECO COMMENT
Environmental Farm Plan	Ministry of Agriculture, Food and Rural Affairs (OMAFRA)	"The ministry is only now beginning to examine the cumulative environmental effectiveness of this approach. Key questions need to be addressed, including the extent to which best management practices have been adopted, and their effectiveness in reducing loadings of nutrients to waterways." (2010/2011 Annual Report, page 12)
Provincial Policy Statement (PPS)	Ministry of Municipal Affairs and Housing (MMAH)	"Ten years ago, the ECO recommended that MMAH monitor whether the PPS is having the desired effects ... In April 2009, MMAH finally released a draft set of indicators to assess the performance and effectiveness of the PPS. To a large extent, these draft indicators only determine how "consistent" official plans are with the PPS, rather than assess whether provincial direction is achieving an actual on-the-ground effect in conserving natural heritage." (2008/2009 Annual Report, page 23)
Go Green Climate Change Action Plan	Ministry of the Environment (MOE)	"In terms of monitoring and evaluation, the process does not clearly indicate how results will be used to adjust strategies for the design and implementation of new (and existing) initiatives (policy learning); nor is it clear how results will be used to enhance accountability for performance (performance management)." (2008/2009 Annual Greenhouse Gas Progress Report, page 26)
Regulation of municipal wastewater	Ministry of the Environment (MOE)	"The public is left in the dark on the performance of municipal wastewater facilities." (2009/2010 Annual Report, page 86)
Control of industrial air emissions [under sector-based technical standards]	Ministry of the Environment (MOE)	"The ECO also urges the ministry to include emission reporting requirements in all sector-based technical standards ... without full Emission Summary and Dispersion Modeling reporting, there will be no way to track progress in emission reductions and assess the effectiveness of the technical standards." (2009/2010 Annual Report, page 98)

Table 6.4.1 (Continued). Examples of the Weak Evaluation of Ontario Environmental Programs (Source: Past ECO Reports)

PROGRAM	MINISTRY	ECO COMMENT
Forestry management to protect biodiversity	Ministry of Natural Resources (MNR)	The ECO recommended that MNR immediately develop a rigorous monitoring and research program and the necessary computer-based mapping and decision-support tools for planning forest harvesting. "It is imperative that MNR be able to demonstrate to the public that this approach is scientifically sound and effective." (2001/2002 Annual Report, page 56) "The ECO is concerned about the strength of the wildlife population programs that MNR reports to be implementing .... Better monitoring is needed to achieve greater confidence about the status of birds in the boreal forest and the effects of forestry on bird habitat." (Supplement to the 2007/2008 Annual Report, page 276)
"State of the Parks" reporting	Ministry of Natural Resources (MNR)	"The law directs that [State of the Parks reporting] will include a broad assessment of the extent to which the objectives of protected areas are being achieved, the degree of ecological representation, and known ecological threats, as well as the socio-economic benefits." (2008/2009 Annual Report, page 59)
Protection of wetlands	Ministry of Municipal Affairs and Housing (MMAH) and Ministry of Natural Resources (MNR)	"Ontario has poor information on wetlands and their status .... MNR and MMAH must monitor and study wetland loss and the impacts of the 2005 PPS policies and other plans in order to assess their effectiveness before the next scheduled PPS review and the next 10-year review of the regional land use plans." (2006/2007 Annual Report, page 42)
Lakeshore capacity assessment in cottage country	Ministry of the Environment (MOE), Ministry of Natural Resources (MNR) and Ministry of Municipal Affairs and Housing (MMAH)	"A mechanism to monitor the adoption and effectiveness of the lakeshore capacity assessment appears to be lacking ... the ECO urges MOE, MMAH and MNR to ... specify a timeline for reviewing the [Lakeshore Capacity Assessment Handbook] and its effectiveness going forward." (2010/2011 Annual Report, page 68)

Why Evaluate?

Program evaluation helps program managers focus on effectiveness; it allows a comparison between hoped-for results and unvarnished evidence. Program evaluation is becoming increasingly important, as governments of every stripe struggle to meet their legislated obligations within tight or shrinking budgets. With this overview, the ECO hopes to highlight environmental evaluation as a concept and technique, and to open a dialogue with ministries on developing and applying this tool. When used wisely, evaluation can strengthen the way problems are defined, the way resources are assigned and the way results are assessed. Good evaluation can add credibility to programs, and when evaluation findings are fed into improvement cycles, they can ultimately lead to better environmental outcomes.

What is Program Evaluation?

Program evaluation is the comprehensive study of a program to assess how well it is working, typically examining its effectiveness, its efficiency, its relevance and its affordability over time. Program evaluation requires both data and a methodology. There is no one uniform approach that will suit all situations, but Table 6.4.2 provides a thumbnail sketch of the evaluation tools that could be used, illustrated with a hypothetical program designed to protect a population of toads from road traffic.

A caution: "program evaluation" is too often equated with "program review" or "strategic review." The latter terms are often euphemisms for broad-scale cost-cutting exercises during financial crises. Program reviews may mow down both strong and weak programs, especially when credible metrics are lacking. During such episodes of crisis, demonstrably effective programs may stand a better chance of survival. But the demonstration — the evaluation — needs thoughtful foresight and documentation to be credible.

Special Challenges for Environmental Evaluators

Environmental programs can create special challenges for evaluators, especially challenges of complexity, long timeframes and data quality. Complexity is often a feature since environmental problems typically have numerous contributing causes, operating at multiple geographic or temporal scales, each calling for a tailored set of interventions. In addition, the timeframes needed to observe desired outcomes can be daunting; for instance, it may take decades to restore degraded ecosystems. Data quality can also be frustrating as baseline conditions may not have been monitored adequately, the relevance of indicators may be disputed, and protocols for data collection and analysis may vary over time and space.

Advances in other Jurisdictions

Some governments (and some of the largest philanthropic agencies, such as the Bill and Melinda Gates Foundation) have already built sophisticated evaluation cultures. The international evaluation community is tackling challenges of methodology with thoughtfulness, creativity and some urgency. The key point is that they *are* being tackled — in the U.S. and elsewhere — based on a consensus that good evaluation makes for better decision making and better outcomes. Both the Canadian and U.S. federal governments have advanced evaluation practices and policy structures, applicable across government, including environmental programs. At Environment Canada, for example, all programs (including "horizontal" programs delivered in partnerships) must be evaluated by internal evaluation professionals. Environment Canada's evaluation reports are published on the department's website under proactive disclosure. Similarly, the U.S. Environmental Protection Agency (EPA) has a well-established evaluation culture, and supports evaluation skill development in the broader public sector through website resources, conferences and other ongoing training opportunities. Evaluations of U.S. EPA programs are also accessible online.

Table 6.4.2. Program Evaluation Tools

PROGRAM EVALUATION TOOLS	APPLICATION TO HYPOTHETICAL EXAMPLE
Clear description of the program's mission, scope and activities	**Mission**: To protect toads from road traffic **Scope**: Evergreen Swamp on County Rd. 6 **Activities**: Public education, installation of culverts and screening/fencing
Planned outputs and expected outcomes (short-term and long-term)	**Outputs:** Signage; culverts under road; screening to guide toads towards culverts **Short-term outcome**: Significantly reduce traffic mortality of toads on this road; improve motorist awareness **Long-term outcome**: Healthy, stable toad population at this location
Questions to evaluate the program's relevance, effectiveness and efficiency	• How effective was the signage in changing motorist behaviour? • How effective were the culverts in changing toad behaviour? • What other factors are affecting local toad population?
Performance indicators (metrics) to measure short-term outputs, as well as long-term effects and outcomes. These should be SMART – Specific, Measurable, Attainable, Relevant and Time bound	**Outputs**: Number of signs, culverts, screens installed **Outcomes**: Road mortality rates before/after program; motorist awareness survey before/after program; population estimates before/after program
Findings and analysis	• Road mortality rates cut dramatically • Motorist awareness slightly increased • Population changes inconclusive
Learning from the findings to support an ongoing cycle of improvement	• Culverts can be recommended for other wetlands • Continue population monitoring • Consider other factors affecting population

In both Canada and the U.S., program evaluation has been strongly promoted at the highest government levels, and this support from the top clearly has helped the concept gain traction. As far back as 1993, U.S. President Reagan enacted the *Government Performance and Results Act* (*GPRA*), requiring all U.S. federal agencies to link strategic plans with performance outcomes. President Obama reauthorized and strengthened the *GPRA* in 2010, reinforcing aspects such as skills training, transparency and the use of program evaluation findings. New resources are creating momentum: President Obama's 2011 budget allocated approximately $100 million to conduct new evaluations in selected agencies. Special funding for evaluation continued in the 2012 U.S. budget against a backdrop of fiscal austerity; clearly, results-focused evaluations are not seen as frills. The new Obama initiative supplements the evaluations that traditional U.S. oversight agencies, such as the Congressional Government Accountability Office, have long been publishing.

For the Canadian federal government, a game-changing policy on evaluation was imposed by Treasury Board in 2009, focusing evaluations on relevance and performance, and requiring 100 per cent coverage of all direct program spending within a five-year cycle. Again, these evaluations are in addition to the external performance audits conducted by the federal Office of the Auditor General of Canada and, for environmental programs, by the Commissioner of the Environment and Sustainable Development (appointed by the Auditor General).

Ontario: Early Days for Evaluation

Ontario has no comparable regulatory or policy driver for program evaluation. Programs are expected to exhibit fiscal responsibility, but program effectiveness is not yet given enough scrutiny. This has long been a concern of the Auditor General of Ontario, who has urged ministries to measure the results achieved by programs using meaningful and reliable information. The Drummond Report, which made headlines in February 2012, stressed the same message:

> *Policy development and the [Ontario] public service in general should be more evidence-based. This requires setting clear objectives based on sound research and evidence.*

As a management tool, program evaluation is only slowly gaining a foothold in Ontario ministries. Under the banner of "results-based planning," ministries have taken at least a preliminary step of setting performance targets for selected priority programs, but this initiative does not appear to be linked to program evaluations. Thus far, Ontario's clearest official encouragement for program evaluation has come in the form of a helpful guide, published by the Ministry of Finance in 2007. The guide recommends (but does not mandate) program evaluation to:

- pinpoint what is and is not working;
- highlight what a program is achieving and how it helps people;
- identify gaps;
- improve effectiveness; and
- encourage best practices.

Some Bright Spots

There are some bright spots and centres of excellence within Ontario ministries, where evaluation is being embraced as a helpful tool. Designers of new programs, especially flagship programs with high public profile, are increasingly mindful of the need to demonstrate measurable outcomes. Two environmental examples in Ontario deserve mention in this regard: the Ministry of the Environment's (MOE's) drinking water protection program, and its Lake Simcoe Protection Plan.

Ontario today has a very strong program to protect municipal drinking water quality. It wasn't always so; Ontario's rise to drinking water excellence required years of very concerted effort, following a contaminated drinking water tragedy in 2000 that killed seven people and made over 2,300 ill. MOE rebuilt its drinking water program with a strong evaluation component, including clearly defined metrics and targets, rigorous testing, transparent public reporting, and a commitment to learn from results. MOE's approach has paid off; the most recent annual report of the Chief Drinking Water Inspector observed that

> *In 2009-10, more than 645,000 tests were conducted on samples from Ontario's drinking water systems. 99.88 per cent of results from municipal residen¬tial drinking water systems met Ontario's rigorous health-based standards. This is great news. We have seen strong drinking water quality results now for six consecutive years.*

Similarly, MOE's 2009 Lake Simcoe Protection Plan includes a long-term goal to restore the lake's dissolved oxygen levels to 7 milligrams/litre. The goal is supported by a target to cut phosphorus loadings to 44 tonnes/year by 2045. The ministry has also promised to review this strategy in five years, and adapt as needed.

Auditors Do Not Reach All Programs

The Ontario government does have long-established auditing mechanisms for evaluating the efficacy of select programs, including environmental programs. Programs may be periodically evaluated by either the Auditor General of Ontario — whose findings are published annually, or by the Ontario government's Internal Audit Division — whose findings are not published. The Auditor General, with a broad auditing oversight function for all ministries and numerous provincial Crown Agencies, typically conducts about one or two value-for-money audits on environment/natural resources programs annually, based on risk criteria. Similarly, the Internal Audit Division has divided its responsibilities into clusters of ministries, and selects programs within each cluster, also based on risk criteria. In both cases, the risk criteria tend to select for larger, big-budget programs with high public profiles. However, many environmental programs tend to be relatively small, low-budget and low-profile. Furthermore, many environmental programs are "horizontal"; they are delivered in collaboration with partner agencies, often for very good reasons. Such programs may have large environmental significance, but the diffused accountability means they are unlikely to be evaluated for effectiveness.

ECO COMMENT

Ontario ministries deliver a wide diversity of important environmental programs. Some were established decades ago, some have morphed repeatedly over time, and some are managed collaboratively with partners. Most deserve a periodic evaluation for effectiveness, but Ontario's formal evaluation system typically addresses only certain "high-risk" programs. The environment does not win when environmental programs are passed over by evaluators. On the contrary, unevaluated programs are especially vulnerable in times of fiscal austerity. Such programs are also missing out on opportunities to learn, to build on strengths, to scale up demonstrated successes and to adapt to new dynamics.

An evaluation mind-set has not yet become entrenched in Ontario ministries, perhaps because the central agencies have not yet sent a sufficiently strong signal — the message that "outcomes on the ground matter." While an evaluation culture cannot be created overnight, individual ministries have considerable scope in the near term to nurture this mindset by:

- training staff on evaluation skill-sets;
- designating an "evaluation champion" within senior management;
- identifying and highlighting internal centres of excellence; and
- sharing experiences internally and across ministries.

In the near term, front-line program managers should also be empowered to experiment with evaluation approaches, and to examine the relevance and adequacy of existing indicators and databases within their own programs. In the longer term, if evaluation is to become a core element of government accountability, Ontario will likely need a government-wide, unmistakable directive, and will need to invest resources too, analogous to the approaches used by the U.S. and Canadian federal governments.

For ministry comments, please see Appendix C.

CHAPTER 7.0

EMERGING ISSUES

As part of our Annual Report, the ECO often identifies issues that may be escaping broader public attention, but have the potential for significant environmental impacts, and thus deserve greater prominence and stronger government response. This year, the ECO has chosen to focus on one such topic of interest: the issue of wasted food.

7.1 | A Terrible Waste — The Environmental Costs of Throwing Our Food Away

When you throw food away, you may give passing thought to those who suffer from hunger, whether in developing nations or in your own community. You may also think about the money you squandered on that uneaten yogurt or the mushy head of lettuce that sat wilting in your crisper. But do you think about the environmental costs of letting that food go to waste? Sure, you may give yourself a pat on the back for using the green bin, diverting your organic residuals from landfill — but what about the resources that went into getting that food to your plate in the first place? What about the environmental consequences of throwing it away, green bin or not?

If you are not asking yourself these questions, you should. We *all* should — because wasting food is not only a social and an economic problem; it also presents a significant cost to the environment — one we could, with some effort, collectively overcome.

Defining the Problem: What is "Food Waste"?

The waste problem we are discussing here is not the "shells, peels and coffee grounds" portion of food, but rather the avoidable waste: food that is thrown out while it is still edible (a bruised apple or the uneaten portion of our lunch) or food that is allowed to spoil before being consumed (bread that goes mouldy sitting on the counter or that mushy lettuce).

And it is a big problem: in 2011, the Food and Agriculture Organization of the United Nations reported that one-third of the edible parts of food produced globally — roughly 1.3 billion tons — is lost or wasted every year. In Canada, it's even worse; a recent study estimated that 40 per cent of food produced in Canada each year — valued at a staggering $27 billion — is not consumed. Statistics Canada estimated that, in 2007, Canadians wasted the equivalent of 183 kilograms of food per person.

Food waste occurs all the way down the food chain, from "field to fork" — from losses during production, processing, packaging and transportation to wastage at the retail, food service and household levels. But it is we, as consumers, who waste the greatest portion of food: over 50 per cent of the food wasted in Canada is estimated to occur in our homes (see Figure 7.1.1).

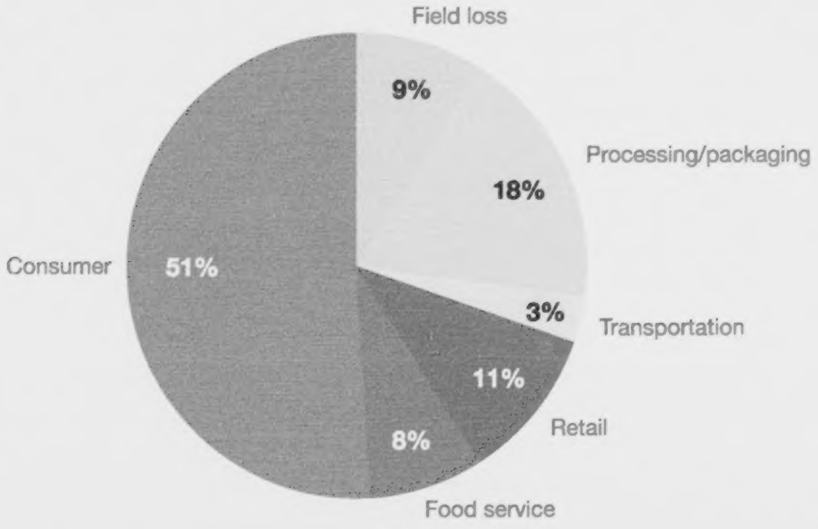


Figure 7.1.1.
Sources of food waste in Canada, by percentage. (Adapted from: Gooch, M., Felfel, A. & Marenick, N. (2010), Food waste in Canada: opportunities to increase the competitiveness of Canada's agri-food sector, while simultaneously improving the environment, Guelph, ON: George Morris Centre, Value Chain Management Centre).

Why Does Food Get Wasted?

A recent study of food waste in Canada identified causes of food waste along the food chain, including, for example: overproduction; product defects; equipment or delivery errors; unnecessary inventory (including at the household level); inappropriate procedures or systems for processing food; excessive transportation; and long periods of inactivity leading to spoilage.

At the household level, food may be wasted due to a number of behaviours, including:

- over-purchasing, due to poor planning or bulk-buying;
- cooking too much/not eating leftovers;

- uncertainty about the safety of perishable food and leftovers; and
- confusion about date labelling (see Box "Confusing Date Labelling Leads to Wasted Food," next page).

The relatively low cost of food in Canada — affording us the luxury of being wasteful with our food — may also contribute to the problem.

Another source of wasted food is consumers' increasing demand for "perfect" produce; fruits and vegetables that are undersized, misshapen or blemished, though perfectly edible, are often rejected by consumers and, consequently, by retailers. These aesthetic standards lead to waste all the way up the food chain.

Why Should We Care?

It may seem like a little thing to throw out the uneaten half of your sandwich or the limp carrots in your fridge. Collectively, though, this behaviour has significant environmental costs. Resources that went into the production, packaging, transportation and storage of that food — and that are now squandered — could have been saved or put to another use. There are additional environmental consequences associated with disposal of that wasted food.

> **Water**: Humans use more water for agriculture than for any other use. One estimate pegs the global water loss associated with food waste, assuming 25 per cent of the world's food

supplies are wasted, at an astounding 675 trillion litres per year — more than the entire volume of Lake Erie. There is no way around it: when food is wasted, water is wasted too.

Energy: Energy is required for the production, processing, transportation (sometimes thousands of kilometres), preparation and storage of food. In the U.S., approximately ten per cent of the energy budget goes to food. Simply reducing food waste could, over the next decades, be an effective approach to significantly reducing our energy consumption.

Greenhouse gases (GHGs): An estimated 20 per cent of global GHG emissions arise from the production and preparation of food. To add insult to injury, when that food goes uneaten, methane — a GHG 25-times more potent than carbon dioxide (CO_2) — is generated if the food goes to landfill. It has been estimated that if avoidable food waste was eliminated, the reduction of GHG emissions would be equivalent to taking one in five cars off the road. The UK government has specifically recognized that reducing food waste could help achieve the country's GHG reduction targets under its *Climate Change Act 2008*.

Packaging: Energy and other resources that go into food packaging are needlessly wasted when food is thrown away. Moreover, the packaging itself of uneaten food either ends up in a landfill or in the recycling stream, unnecessarily using additional resources.

Land use change and soil depletion: When we waste food, we artificially increase the demand for food production and, consequently, the expansion of agricultural lands and deforestation around the globe. Deforestation leads to increased CO_2 released into the atmosphere, contributing to climate change. Greater pressure on existing farmlands also leads to increased soil erosion and nutrient depletion, heightening the need to use fertilizers to maintain yields.

Habitat loss and biodiversity: Converting forests, grasslands and other richly biodiverse ecosystems to farmland eliminates habitat for a wide array of species — for example, South American rainforests cleared for cattle grazing.

CONFUSING DATE LABELLING LEADS TO WASTED FOOD

Have you ever been stumped by the date labels on your food? "Best before," "packaged on," "use by," "sell by," "display until," "expiry" — what do they mean? Consumer confusion over date labelling results in a considerable amount of food going to waste, as consumers discard good food under the misperception that it is no longer safe to eat.

For example, "best before" labels are not about product safety; they are about the freshness and potential shelf-life of the product. According to the Canadian Food Inspection Agency, "you can buy and eat [unopened] foods after the 'best before' date has passed. However, when this date has passed, the food may lose some of its freshness and flavour, or its texture may have changed. Some of its nutritional value ... may also be lost." Bottom line: you do not have to throw out that unopened container of milk at the stroke of midnight on the "best before" date!

What Should We Be Doing?

The best way to reduce the environmental impacts of food waste is to keep food from being wasted in the first place. While diverting organic residue from landfill to composting is a laudable and legitimate goal, it should be a last resort. Consider this: each tonne of food and drink waste prevented is estimated by the UK government to save approximately four tonnes of CO_2 equivalent. By contrast, the same amount of food and drink waste diverted from landfill to compost or anaerobic digestion is estimated to reduce emissions by only 0.4 to 0.7 tonnes of CO_2 equivalent. The winner is clear.

Some examples of policy and other initiatives to keep food from being wasted include the following.

> **Public communication and outreach**: Organizations such as the UK's Waste and Resources Action Programme (WRAP), a government-funded not-for-profit company, are boosting public awareness about food waste. WRAP's "Love Food Hate Waste" website provides advice on shopping for, storing and preparing food to help consumers reduce their food waste and save money. The approach seems to be working; in March 2012, the UK government's Department for Environment, Food and Rural Affairs reported a reduction in household food waste between 2006/2007 and 2010 of 1.1 million tonnes (approximately 13 per cent) per year.
>
> Closer to home, the Recycling Council of Ontario's Waste-Free Lunch Challenge raises awareness by helping schools reduce the amount of waste generated by students' lunches (estimated at 30 kg of waste per student per school year). In addition to advocating for packaging-free lunches, the program promotes packing lunches in serving sizes that will be completely eaten, or saving leftover food and drink in re-usable, re-sealable containers to be consumed (or composted) later.
>
> **Improving date labelling**: Responsibility for date labelling of foods imported into, manufactured in and/or sold in Canada lies with the federal government. However, producers and retailers could be encouraged to educate consumers about the meaning of date labels.
>
> In September 2011, the UK government released new guidance for date labelling food. The document provides a set of non-binding best practices intended to reduce consumer confusion about date labels that often leads to wasted food. Among the best practices is advice to retailers to avoid using "display until" and "sell by" labels (intended for stock control) that may lead consumers to mistakenly discard food as unsafe while it is still perfectly edible.
>
> **Designating food as waste**: Under Ontario's *Waste Diversion Act, 2002*, if a material is "designated" as waste, the Minister of the Environment can direct Waste Diversion Ontario (a non-Crown corporation established under the Act) to develop a waste diversion program for that waste in co-operation with an industry funding organization. In the context of food waste, an industry funding organization could require stewards (food brand owners and importers) to pay fees to manage their products as designated waste. Appropriately set fees could create an incentive for the food industry to find ways to reduce or discourage unnecessary disposal of their products.

Food donation and recovery: A number of organizations collect perishable excess food from manufacturers, distributors, retailers, restaurants, hotels and other venues and redistribute that food to people in need through food banks, shelters and other social service agencies, keeping that food from ending up as compost or, worse, landfill. One such organization in Ontario, Second Harvest, reports that it has diverted more than 70 million pounds of food since 1985 (preventing over 35 million pounds of GHG equivalents from entering the atmosphere).

Ontario's *Donation of Food Act, 1994* protects from liability those who, in good faith, donate or distribute donated food, if consumption of that food accidentally results in injury or death. This assurance is intended to encourage those with excess edible food to donate it for redistribution to those in need without fear of legal repercussions.

Gleaning: When farm crops are harvested, significant amounts of produce are often left behind for various reasons (e.g., harvesting technique, quality or aesthetic standards, etc.). Other crops are left unharvested altogether due to market conditions. Approximately 25 million pounds of food are estimated to remain in farm fields post-harvest in Ontario each year. "Gleaning" is the act of collecting and using those leftover crops that would otherwise be ploughed under, composted or go to waste. In many places, including Ontario, gleaning projects have volunteers collecting fresh produce left behind on farm land and redistributing that food to those in need.

In 2010, a private member's bill introduced in the Ontario Legislature proposed a significant tax credit for farmers who donate their surplus agricultural products to food banks. The bill received Second Reading and was ordered referred to Standing Committee on General Government, but was never passed. An identical bill was introduced in the current Parliament in June 2012, receiving First Reading just before the House rose for the summer.

Other Strategies: Institutions, including some Ontario universities, are making efforts to reduce food waste by introducing "trayless eating." Removing trays in buffet-style or all-you-can-eat cafeteria venues has been reported to reduce the amount of wasted food by 25-30 per cent. It also saves energy, water and detergent required to clean the trays. Another strategy introduced by a UK grocery retailer is the concept of "buy one get one free – later" (or BOGOF-L). In contrast to traditional "buy-one-get-one-free" or "2-for-1" deals, BOGOF-L discourages consumers from over-purchasing food to get a good deal by allowing them to pick up the free item within a specified period of time after the original purchase. Using this approach, the consumer still gets the deal, but is less likely to allow the "free" item to go uneaten.

What is Ontario Doing?

Any attention to food waste by the provincial government has generally been focused on diverting organic residuals (i.e., yard trimmings and food waste) from landfill – and even then, there is still no province-wide organics diversion program. There seem to be few, if any, government initiatives dedicated to preventing food from being wasted in the first place.

The Ministry of the Environment (MOE) has itself noted that the *Waste Diversion Act, 2002* fails to prioritize waste reduction and reuse over recycling. With organic residuals making up

approximately one-third of the waste generated in Ontario, this failure means significant food waste — much of it avoidable — must be handled at the end of the line.

Nevertheless, source reduction — including reducing food waste — is at least on MOE's radar. In a 2009 discussion paper, From Waste to Worth: The Role of Waste Diversion in the Green Economy, MOE identified the option of developing a long-term (five-year) schedule for waste diversion of certain products, including "branded organics" (i.e., organics that are traceable back to their producers), which could potentially include food waste from packaged products. Under the schedule, designated materials would be banned from landfills, provided there is a viable alternative to disposal; if "branded organics" were designated as waste, this could effectively divert a portion of food waste from landfill. Finally, while not specifically aimed at food waste, MOE identified the potential to impose landfill disposal levies to "[narrow] the price gap between diversion and disposal." While the most likely result is that more food waste would be diverted to compost (a very worthy goal), such measures could also encourage changes along the food chain to reduce the volume of food waste generated in the first place. However, MOE has not proposed moving forward on any of the options described above.

The ECO discussed Ontario's record on waste reduction, including organic residuals, in Part 5.3 of our 2010/2011 Annual Report.

ECO COMMENT

The environmental consequences of letting good food go to waste — up and down the food chain — are staggering. The social and economic benefits of avoiding food waste are equally significant. In short, it is a no-brainer that food waste reduction should figure prominently on Ontario's policy agenda.

The province cannot reach into our homes and force us to eat our crusts. But it can and should be providing us with the knowledge, tools and incentives to stop wasting food. The province could take a number of actions:

- Mount a public education and awareness campaign to target food waste at the household level and gradually shift behavioural norms.
- Work with the federal government and food producers and retailers to improve product date labelling and increase consumer literacy surrounding date labels.
- Require a provincial food waste diversion program to encourage more responsible management of food and food waste.
- Create financial incentives to stop wasting food.
- Partner with or provide support for organizations engaged in food recovery and redistribution.
- Work with farmers, other food producers, retailers and the food service industry to find other creative solutions.

At a minimum, the Ontario government (in particular, MOE and the Ministry of Agriculture, Food and Rural Affairs) should be tracking this issue, gathering reliable data about how much avoidable food waste is occurring in Ontario. This information could and should help inform and prioritize future policy.

Realistically, there will likely always be some food that gets wasted. But if Ontario prioritized food waste prevention and reduced the volume of avoidable food waste generated in the province, it could:

- Shrink our consumption of resources (inside and outside Ontario), including water and energy.
- Reduce GHG emissions from food production, transportation and storage.
- Lessen the demand for agricultural land, resulting in less habitat destruction and biodiversity loss.
- Reduce the volume and environmental costs of landfilling food and food packaging.

It is nothing short of a winning proposition.

For ministry comments, please see Appendix C.

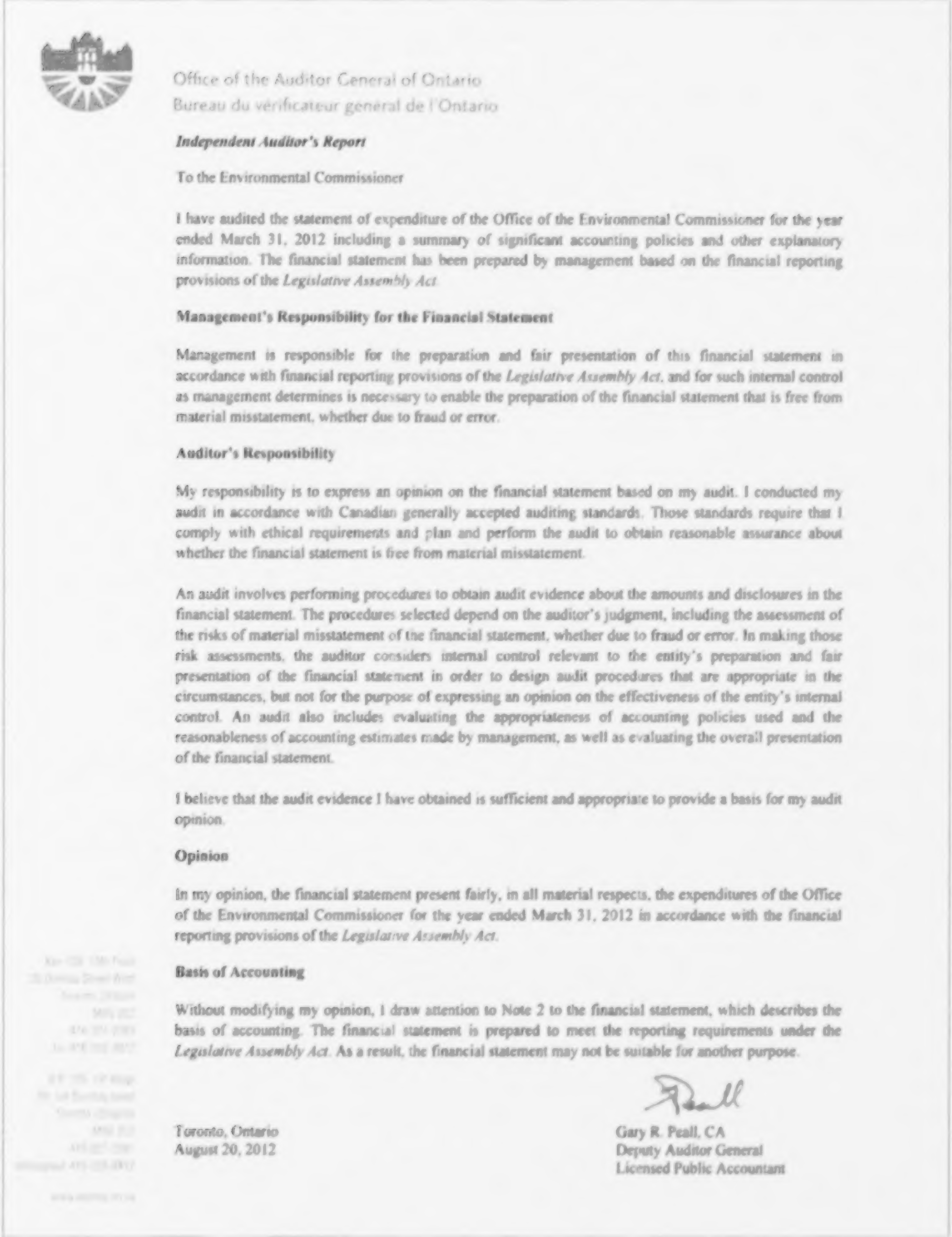
APPENDIX A

Summary of 2011/2012 ECO Recommendations

Recommendation 1	**Chapter 2.3 – MNR's Silence on the Legality of Contests to Kill Coyotes and Wolves** The ECO recommends that MNR publicly confirm whether coyote and wolf-killing contests are legal.
Recommendation 2	**Chapter 2.6 – "Nothing to Report": The Failure of the Provincial Wildlife Population Monitoring Program** The ECO recommends that MOE investigate MNR's compliance with the Declaration Order authorizing timber harvesting under the *Environmental Assessment Act*.
Recommendation 3	**Chapter 2.8 – A Fine Line: Implementing the Ecological Framework for Recreational Fisheries Management** The ECO recommends that MNR proclaim the section of the *Provincial Parks and Conservation Reserves Act, 2006* that authorizes aquatic class parks.
Recommendation 4	**Chapter 2.10 – Where's the Fire? Fire Management Planning for Provincial Parks and Conservation Reserves** The ECO recommends that MNR promptly consult the public and finalize all outstanding fire management plans for provincial parks.
Recommendation 5	**Chapter 3.2 – New Wind Power Rules to Protect Birds and Bats** The ECO recommends that MOE and MNR prohibit wind power development in designated Important Bird Areas.
Recommendation 6	**Chapter 4.1 – Preparing for Drought: Ontario's Low Water Response Plan** The ECO recommends that MNR fulfil its commitment to complete a full policy review of the Ontario Low Water Response Plan.

APPENDIX B

Financial Statements *For the Year Ended March 31, 2012*



Office of the Auditor General of Ontario
Bureau du vérificateur général de l'Ontario

Independent Auditor's Report

To the Environmental Commissioner

I have audited the statement of expenditure of the Office of the Environmental Commissioner for the year ended March 31, 2012 including a summary of significant accounting policies and other explanatory information. The financial statement has been prepared by management based on the financial reporting provisions of the *Legislative Assembly Act*.

Management's Responsibility for the Financial Statement

Management is responsible for the preparation and fair presentation of this financial statement in accordance with financial reporting provisions of the *Legislative Assembly Act*, and for such internal control as management determines is necessary to enable the preparation of the financial statement that is free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

My responsibility is to express an opinion on the financial statement based on my audit. I conducted my audit in accordance with Canadian generally accepted auditing standards. Those standards require that I comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statement is free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statement. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statement, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statement in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statement.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

Opinion

In my opinion, the financial statement present fairly, in all material respects, the expenditures of the Office of the Environmental Commissioner for the year ended March 31, 2012 in accordance with the financial reporting provisions of the *Legislative Assembly Act*.

Basis of Accounting

Without modifying my opinion, I draw attention to Note 2 to the financial statement, which describes the basis of accounting. The financial statement is prepared to meet the reporting requirements under the *Legislative Assembly Act*. As a result, the financial statement may not be suitable for another purpose.

Toronto, Ontario
August 20, 2012

Gary R. Peall, CA
Deputy Auditor General
Licensed Public Accountant

Statement of Expenditure

For the Year Ended March 31, 2012

	Budget (Note 6) $	2012 $	2011 $
Salaries and wages	2,043,600	2,019,998	1,995,218
Employee benefits (Note 4)	470,000	411,923	419,429
Transportation and communication	106,900	97,896	118,121
Services	1,005,700	1,029,603	1,175,075
Supplies	71,500	119,571	159,759
	3,697,700	**3,678,991**	**3,867,602**

Commitments (Note 5)

See accompanying notes to financial statement.

Approved:

Environmental Commissioner

Notes to the Financial Statments

1. **Background**

The Office of the Environmental Commissioner (Office) commenced operation May 30, 1994. The Environmental Commissioner is an independent officer of the Legislative Assembly of Ontario, and promotes the values, goals and purposes of the *Environmental Bill of Rights, 1993 (EBR)* to improve the quality of Ontario's natural environment. The Environmental Commissioner also monitors and reports on the application of the *EBR*, participation in the *EBR*, and reviews government accountability for environmental decision making.

2. **Significant Accounting Policies**

BASIS OF ACCOUNTING

The Office follows the basis of accounting adopted for the Office of the Assembly as required by the *Legislative Assembly Act* and accordingly uses a modified cash basis of accounting which allows an additional 30 days to pay for expenditures incurred during the year just ended. This differs from Canadian generally accepted accounting principles in that for example liabilities incurred but unpaid within 30 days of the year end are not recorded until paid, and expenditures for assets such as computers and office furnishings are expensed in the year of acquisition rather than recorded as capital assets and amortized over their useful lives.

3. Expenditures

Expenditures are paid out of monies appropriated by the Legislative Assembly of Ontario. Expenditures are reported net of recoverable sales tax which is recovered by the Office of the Assembly on the Office's behalf.

Certain administrative services are provided by the Office of the Assembly without charge.

4. Pension Plan and Post-retirement Benefits

The Office's permanent employees (and non-permanent employees who elect to participate) participate in the Public Service Pension Fund (PSPF) which is a defined benefit pension plan for employees of the Province and many provincial agencies. The Province of Ontario, which is the sole sponsor of the PSPF, determines the Office's annual payments to the fund. As the sponsor is responsible for ensuring that the pension funds are financially viable, any surpluses or unfunded liabilities arising from statutory actuarial funding valuations are not assets or obligations of the Office. The Office's required annual payments of $158,994 (2011 - $144,673), are included in employee benefits expense.

The cost of post-retirement non-pension benefits were paid by the Ministry of Government Services and are not included in the statement of expenditure.

5. Lease Commitments

The Office has a lease agreement with its landlord for its current premises expiring on February 28, 2018. The minimum lease payments for the remaining term of the lease are as follows:

	$
2012/13	128,800
2013/14	141,800
2014/15	141,800
2015/16	141,800
2016/17 and beyond	271,700
	825,900

6. Budgeted Figures

Budgeted figures were prepared by the Office and approved by the Board of Internal Economy — an all-party legislative committee. It is presented for information purposes only and has not been audited.

APPENDIX C

Ministry Comments

In this Appendix, ministries provide feedback to the Environmental Commissioner on articles contained in the Annual Report.

Chapter 2 – Issues in Ecosystems

2.1 Ecosystem Restructuring

Ministry of the Environment

MOE shares the ECO's concerns about ecosystem restructuring, particularly phosphorus, nearshore issues and invasive species in the Great Lakes-St. Lawrence River Basin. Ontario's draft Great Lakes Strategy highlights these issues and Ontario's proposed actions to understand and mitigate these problems, and to help prevent future invasions such as Asian carp.

Watershed-based assessment reports and source protection plans provide technical studies, policies to address risks in vulnerable areas, and monitoring programs to protect sources of drinking water. These actions have co-benefits to local ecosystems.

MOE recognizes the need to take a preventative, ecosystem-based approach to environmental problems. To help prevent and respond to some of the pressures and threats to the Great Lakes, the proposed *Great Lakes Protection Act*, if passed, would provide new tools such as: geographically focused initiatives, Great Lakes targets, a forum to co-ordinate priorities among partners, and an Ontario Great Lakes Strategy to guide future action. The draft strategy outlines specific actions Ontario is proposing regarding invasive species and climate change. MOE has also invested in climate change models to better understand local impacts of climate change, including ecosystem impacts.

MOE collects baseline environmental information on the exchange of carbon in the Hudson Bay Lowlands to better understand the role northern peatlands play in the climate system and the potential impacts of climate change and other types of disturbance (i.e., mining, hydroelectricity development) on this important ecozone.

Ministry of Natural Resources

MNR has invested in research and modelling of ecosystems over the past 10 years. Biodiversity monitoring and peat land research currently underway on Ontario's Hudson Bay coast and lowlands will help us to understand the impact of climate change in this ecosystem. MNR has also developed a new adaptive approach to monitoring the effectiveness of our forest management guides that will help to ensure forest sustainability and the maintenance of biodiversity in response to expected system changes. Current research on climate driven large scale boreal forest dynamics (fire, insects, and wind events) will contribute to adaptive resource management decisions. Aquatic research and monitoring programs associated with Great Lakes, inland lakes and rivers and streams contribute to our understanding of broad-scale (climate change and invasive species) and more local factors affecting Ontario's aquatic ecosystems and their response over time.

2.2 When Agriculture and Wildlife Clash: The Ontario Wildlife Damage Compensation Program

Ministry of Agriculture, Food and Rural Affairs

The list of eligible farmed species and wildlife species was developed through consultations with the public and industry organizations.

No new fur-bearing or game bird species were made eligible for compensation under the program. The ministry received no concerns about coverage of native species until after the program was implemented. OMAFRA can take this issue into consideration during the next regular review of the program in 2013.

The schedule for compensation maxima was adopted from Canadian Food Inspection Agency's regulations for compensation for destroyed animals since the CFIA and industry undertake a price discovery process to arrive at the maxima.

The ministry strives to meet *EBR* posting requirements and welcomes ongoing dialogue to collaborate with the ECO on future notices.

Ministry of Natural Resources

No Response.

2.3 MNR's Silence on the Legality of Contests to Kill Coyotes and Wolves

Ministry of Natural Resources

In most of southern Ontario, coyote seasons are open year-round with no limit on the number of animals that can be harvested by licensed hunters and trappers.

The Ministry determined that an investigation under the *EBR* was unnecessary in relation to the contraventions alleged in the application as any changes in how coyotes are harvested during these contests would not likely cause harm to the environment.

The Ministry's conservation officers continue to monitor coyote hunting across Ontario to monitor hunters' compliance with applicable laws including measures intended to protect public safety and prevent the spoilage of pelts with commercial value.

The changes to the *Fish and Wildlife Conservation Act, 1997* proposed in Bill 55 (*Strong Action for Ontario Act*) are enabling in nature. In order to delegate powers to a third party, further regulatory changes would be required. If any such changes are envisioned in the future, regulatory changes would be posted on the Environmental Registry for public comment before amendments could occur.

2.4 "Damage or Destroy": New Guidance on Protecting the Habitat of Ontario's Species at Risk

Ministry of Natural Resources:

MNR policy on damage and/or destruction of habitat balances habitat protection with improved transparency for proponents, and provides a framework for grouping areas of habitat into categories according to species' anticipated levels of tolerance to alterations. The policy's principles and considerations help determine whether an activity is likely to damage or destroy habitat (and therefore require a permit).

An inherent principle of risk and adaptive management is built into the policy to ensure that as our collective understanding grows, future approaches, decisions and guidance for protecting and recovering species at risk and their habitats will be incorporated accordingly. MNR agrees that the determination of damage/destroy should be based on the most complete and accurate information available.

2.5 Linking Conservation and Agriculture: Finding a Solution for Bobolink

Ministry of Natural Resources

A time-limited transition period was proposed to enable residential development on grassland habitat to recognize the development industry's significant investment in land use planning approvals before bobolink or eastern meadowlark became protected species. The transition protects these species and provides certainty to developers by specifying mandatory measures to protect the species. Developers are prohibited from conducting activities in these species' habitat when the birds are nesting and must enhance, create, or replace habitat affected by development.

Section 13 of the *EBR* provides for the Minister's sole discretion to determine whether a proposal has been so fundamentally altered as to become a new proposal.

The regulation to exempt development activities as well as agricultural activities in respect of bobolink/eastern meadowlark habitat is not anticipated to expand the area in which their habitats will be affected, as developers would only encounter bobolink and eastern meadowlark when proposing to continue previously approved development activities on agricultural lands currently leased to farmers.

2.6 "Nothing to Report": The Failure of the Provincial Wildlife Population Monitoring Program

Ministry of Natural Resources

In approving MNR's EA (1994), the Board approved an overall management approach in which MNR uses implementation manuals. It ordered Conditions 93, addressing reviewing and updating manuals; 80, requiring long-term scientific study into management guidelines; and 81, requiring long-term provincial wildlife population trend monitoring. Similar conditions were ordered in MOE's approval (2003) extending the EA.

MNR has prepared and updated a Program Plan for the Provincial Wildlife Population Monitoring Program (PWPMP) which is publicly available. Version 2.0 (2010) of the plan outlines priorities, proposed monitoring activities and schedules; and identifies species being observed through monitoring including the habitat type used. The PWPMP has successful partnerships with other MNR program areas and external agencies to conduct the provincial wildlife population monitoring. The PWPMP reports on its implementation in Forest Management Annual Reports and summarizes significant accomplishments in Five-Year EA Reports. Monitoring information collected by the PWPMP is the basis for reporting on Indicator 1.2.2 in the State of the Forest Report. Since 1997, the PWPMP has produced (directly or through partners) and/or contributed to over 100 reports/papers.

In 2011, the program reported that although populations varied among different taxonomic groups and species; available long-term provincial wildlife population monitoring data suggests that the populations of three provincially featured species (deer, moose, and pileated woodpecker) have been stable to increasing in numbers since 2000; that the populations of the fourth provincially featured species (marten) appears to be stable; and short-term trends in monitored resident bird species indicates relatively stable populations.

A pilot study of a systematic plot-based monitoring protocol for multiple species inventory and monitoring is being conducted. Over 115 species were detected each annually over the past two years (including birds, mammals, reptiles and amphibians). The study is continuing in 2012.

Ministry of the Environment

MOE takes an active role in ensuring MNR is in compliance with the Declaration Order, to ensure the sustainable management of Ontario's forests. MOE reviewed MNR's 2010 provincial wildlife population monitoring program plan as part of its role in overseeing compliance. MOE ensured that the plan would be made publicly available and that future reports would involve public consultation. MOE also ensured that the plan met the requirements of the wildlife population monitoring condition of the Declaration Order and that MNR outlined its plan for moving the program forward.

The Declaration Order includes mechanisms to ensure accountability and oversight. This includes the requirement for MNR to submit regular reports and a five-year report on the implementation of the Declaration Order, to highlight how implementation issues have been addressed, as well as provide a summary of the major results of the wildlife population monitoring program. MOE reviews all reports required to be submitted, and to date, MNR has met these reporting requirements. Additionally, at any time, if issues are raised or if MOE has concerns that existing conditions are not protective of the environment, MOE can amend or propose conditions to the Declaration Order to ensure the environment is protected.

MOE also ensures MNR complies with the Declaration Order requirements by reviewing individual environmental assessment (EA) requests related to forest management plans (FMP), through audits on FMPs that are subject to new requirements through conditions. MOE has conducted FMP audits every one to two years since 2002. In one instance, MNR was not compliant with conditions of the FMP; however, the issue was administrative in nature and MOE took action to ensure MNR addressed the matter. In the other cases, MNR was in compliance.

2.7 Protecting Algonquin's Brook Trout from the Impacts of Commercial Timber Harvesting

Ministry of Natural Resources

MNR places a high emphasis on the protection of natural brook trout lakes, which includes research in Algonquin Provincial Park by the Harkness Laboratory of Fisheries Research, and measures in the Algonquin Forest Management Plan that protect nursery and spawning habitat.

Effectiveness monitoring studies on forest harvesting impacts on aquatic values are ongoing and MNR will continue to support brook trout research in Algonquin, with a priority on conservation and sustainability issues.

Results of some shoreline harvesting research will be available to the public prior to the 2015 review of the Stand and Site Guide. Other projects will not produce results until after 2015. The 1998 Algonquin Provincial Park Management Plan was written with a 20-year perspective in mind. In 2009, MNR announced they were moving forward on lightening logging's footprint in Algonquin with input from environmental and forestry advisors. An amendment to the park management plan is required and Stage 1 of this process has occurred.

2.8 A Fine Line: Implementing the Ecological Framework for Recreational Fisheries Management

Ministry of Natural Resources:

MNR continues to work with Fisheries Management Zone (FMZ) Advisory Councils to develop Fisheries Management Plans and will continue its practice of posting the plans on the Environmental Registry for public comment.

MNR posted a Decision Notice on the Registry (#PB05E6808) on April 6, 2009 to not proceed with the proposal for a sunfish toolkit. MNR indicated that it would defer implementation of the sunfish toolkit until after public consultation of FMZ 17 and 18 Advisory Council recommendations to MNR for zone-wide sunfish regulations. MNR also indicated that it may re-evaluate the content of the sunfish toolkit and if changes were necessary, re-post a revised proposal for public comment. MNR is currently working with FMZ Advisory Councils to develop biological, social and economic objectives at landscape scales and will be working with councils to determine the most appropriate tools for achieving those objectives. To support that approach, MNR will review the latest fisheries science and fisheries management practices in order to update policy and guidance documents including, where necessary, regulatory toolkits to assist with fisheries management planning.

MNR agrees that in some cases there may be a need for different fisheries management in protected areas than on other Crown lands to meet the objectives of the *Provincial Parks and Conservation Reserves Act, 2006* (*PPCRA*). A landscape level approach to fisheries management planning does not preclude applying different management tools in protected areas in order to achieve fisheries and aquatic ecosystem objectives for the planning area.

2.9 The Province's Forgotten Fauna: Marine Mammals in Ontario

Ministry of Natural Resources

In February and March 2012, MNR held extensive engagement sessions with stakeholders, other jurisdictions, and other ministries to discuss the government response statement for polar bear. MNR is fully and comprehensively considering all of the input received during the early engagement sessions, and when available the draft government response statement for polar bear will be posted for public comment on the Environmental Registry.

MNR also acknowledges its requirement to prepare a management plan for beluga whales, which will also be posted for comment on the Environmental Registry when it has been drafted.

2.10 Where's the Fire? Fire Management Planning for Provincial Parks and Conservation Reserves

Ministry of Natural Resources

MNR continues to consider the ecological role of fire in the planning and management of provincial parks and conservation reserves. Fire management is addressed during the preparation of management direction for a park or conservation reserve. In some cases, the preparation of a fire response plan or a fire management plan may be needed to provide sound fire management direction.

There are eight fire response plans for 22 other protected areas including Quetico Provincial Park. These response plans provide internal operational direction for MNR staff responding to fires in these protected areas.

MNR supports a growing prescribed burning program in protected areas. A list of prescribed burns scheduled to be conducted in 2012 is available on the Environmental Registry (#011-5659).

2.11 Revenge of the Weeds

Ministry of Agriculture, Food and Rural Affairs

Citations by the ECO to specific papers in the peer-reviewed scientific literature would be helpful. There is still much debate in the scientific community on the impacts of glyphosate. OMAFRA would welcome an opportunity to discuss weed control in an Ontario context with the ECO. The causes for amphibian decline are complex and multi-factorial. The ministry has produced educational videos for the Ontario Pesticide Education Course to bring awareness of the potential for non-target drift www.omafra.gov.on.ca/english/crops/resource/spraydrift.htm. The ministry also leads work on a herbicide selector (www.weedpro75.com) that identifies buffer zone restrictions.

OMAFRA staff continue to look at ways to effectively and efficiently manage weeds based on non-chemical practices and/or herbicides. Research will continue to assist with identifying effective integrated weed management practices and evaluating new reduced risk and non-chemical alternatives.

The Environmental Farm Plan (EFP) provides farmers with technical information on pesticide handling and storage and pest management, including non-chemical approaches to manage pests (weeds). The EFP is an important vehicle to provide new research information to farmers on alternative weed management strategies.

OMAFRA has been proactive in improving glyphosate management over the years. As early as 2003, OMAFRA's 7 steps to glyphosate stewardship document was published: www.plant.uoguelph.ca/resistant-weeds/resources/stewardship.html

The OMAFRA/University of Guelph (UofG) Partnership research project "Maintaining Plant Health with Effective Integrated Weed Management Strategies" contains research objectives to: "determine alternative methods for control of glyphosate resistant weeds" and "evaluate new pesticide free weed control tools." This project is to be completed by April 2013.

www.uoguelph.ca/research/apps/omafra/omafra_project_details.cfm?PROJECT_NO=26954

The OMAFRA/UofG Partnership Production Systems and the Environmental Sustainability Research Themes have several priorities including focus on the environmental impact of agricultural production. Visit: www.uoguelph.ca/research/apps/omafra/

Effective and efficient weed management strategies need to balance a number of important factors including environmental considerations, production yields and costs, and producer preferences.

Ministry of Natural Resources

No Response.

Chapter 3 – Planning Issues

3.1 Guide for Crown Land Use Planning

Ministry of Natural Resources

MNR will continue to seek opportunities to enhance the *Public Lands Act* (*PLA*). To this end, the *Far North Act, 2010* included a consequential amendment to the *PLA* providing the Minister with clear authority to conduct land use planning governing the use of public land, and requiring that land use plans be developed in accordance with "land use policies and guidelines" (Section 12.1(1) of the *PLA*), which includes the Guide for Crown Land Use Planning. The Guide indicates that through local planning, land use policies can be developed to protect values including ANSIs and wetlands, which are considered during the disposition process.

In land use decisions, including the establishment of protected areas, MNR engages Aboriginal communities, stakeholders, and other ministries. The clarification provided in the Guide to Crown Land Use Planning regarding the relationship between mining and other Crown land uses brings greater certainty to local planning processes and the mining industry. With respect to the application of interim protection to candidate protected areas, the Guide states, "*in some situations it may be appropriate to apply interim protection to candidate protected areas which are being discussed in a public planning process.*"

3.2 New Wind Power Rules to Protect Birds and Bats

Ministry of Natural Resources

Since 2009, MNR has been working with the University of Western Ontario on research to identify habitat characteristics and ecology of bat migratory stopover areas, to help develop criteria to identify and evaluate significant migratory stopover areas for bats.

Ontario's requirement for operational mitigation, upon reaching a mortality threshold, provides further protection for migratory and resident bats. Operational mitigation during the bat migratory period has been found to reduce mortality by up to 70 per cent. Ontario is the first North American jurisdiction to implement a mortality threshold and operational mitigation approach to address significant bird and bat mortality at wind power projects.

While important bird areas are a consideration as they contain significant bird habitats, they are non-governmental designations, and do not constitute a habitat under MOE's REA regulations. MNR's bird guidelines were revised following consultation to identify as important information sources for candidate bird significant wildlife habitats, and recommend that IBA records be used in conjunction with MNR's Significant Wildlife Habitat Technical Guide to identify and evaluate candidate bird SWH. SWHs identified within IBAs are protected through the REA regulation and NHA process. This approach allows for environmental effects assessment and mitigation focused on specific habitats and species within the broad range of IBAs across Ontario.

All post construction monitoring data for birds and bats will be submitted to the Wind Energy Bird and Bat Monitoring Database. Analysis of this information will allow for a provincial assessment of cumulative effects, and support an adaptive management approach to protecting birds, bats and their habitats.

Ministry of the Environment

No response.

Ministry of the Environment

MOE, MMAH and MNR carefully considered the application for review. The ministries concluded that the applicants' concerns and the public interest are sufficiently addressed through a range of existing initiatives, including the following related to MOE's mandate.

MOE is consulting on a draft Best Management Practices for Soil Management in Ontario which encourages re-use of soil, sets expectations for soil management, including soil testing for source sites, receiving sites, and soil banks. The guide will promote the consistent application of existing legislative and regulatory requirements for soil management by involved agencies, including municipalities, conservation authorities, MOE and MNR. MOE will consider feedback on the draft guide.

The Municipal Engineers' Association Class Environmental Assessment process already requires those proposing projects in the moraine area to consider all applicable provincial plans, including the Oak Ridges Moraine Conservation Plan (ORMCP). MOE's existing Codes of Practice provide guidance on aspects of the Environmental Assessment process, including 'needs and alternatives'.

Ecosystem functions, water flows, and ground and surface water interactions are among the issues considered in the review of permit applications. Cumulative impacts are also considered and addressed as necessary. MOE business protocols ensure that proposals within the ORMCP area are flagged and reviewed within that context.

MOE will continue to work with MMAH, MNR and other ministries to monitor the effectiveness of the policies of the ORMCP and to conduct research and analysis in preparation for the 2015 ORMCP review.

Ministry of Natural Resources

MNR will continue working with the Ministry of Municipal Affairs and Housing, which has responsibility for the Oak Ridges Moraine Conservation Plan, to support the implementation and future review of the Plan.

MNR plays a role in the management of commercial fill where the fill is being disposed of within a pit or quarry regulated under the *Aggregate Resources Act* (*ARA*). In these situations, the quality of material is regulated through the licence or site plan, and the material must meet approved parameters.

Once a site is rehabilitated and the *ARA* licence is surrendered, the site is no longer considered a 'pit' and is not within MNR's regulatory control.

Ministry of Municipal Affairs and Housing

Because the *Oak Ridges Moraine Conservation Act, 2001* (*ORMCA*) doesn't provide the legislative authority to regulate the use of lands outside the ORM (O. Reg. 01/02) the Oak Ridges Moraine Conservation Plan (ORMCP) cannot be amended as proposed. But, lands outside of the ORM are subject to the PPS, 2005, and other provincial plans that provide policy direction for growth and guide infrastructure decisions to encourage more efficient development. MOE's source water protection and Permit to Take Water process already address activities related to groundwater protection.

The 10-year review of the Greenbelt Plan, ORMCP and Niagara Escarpment Plan is scheduled to commence in 2015. To support the co-ordinated reviews MMAH leads a Greenbelt performance measurement inter-ministry team. A monitoring framework document provides the basis for collecting and analyzing data to support Greenbelt performance indicators based on the policy themes of the Plans. The inter-ministry team is finalizing the results for the initial set of draft indicators, the subject of an earlier *EBR* notice, and is developing indicators for the remaining policy themes.

Matters raised by municipalities, stakeholders, partner ministries and the public will be considered, and help inform the review.

Under s. 23(1)(f) of the *ORMCA*, the Minister may require lower and single-tier municipalities on the moraine to pass tree-cutting and site alteration by-laws. MMAH's preliminary analysis indicates the majority of municipalities have adopted site alteration and tree-cutting by-laws.

Municipalities are recognized as mature and responsible levels of government that have the broad powers and tools to address environmental concerns and impacts from site alteration and tree cutting.

The *Municipal Act, 2001* provides the legislative framework for municipalities to make decisions and pass by-laws on matters within their jurisdiction, including site alteration and tree-cutting, and to ensure by-law enforcement.

3.4 Planning, Creating and Sustaining Transit-Oriented Communities

Ministry of Transportation

No response.

3.5 Growth Plan Amendments for Simcoe

Ministry of Infrastructure

The Growth Plan for the Greater Golden Horseshoe's five-year progress report illustrates the positive impacts it is having with regard to intensification, downtown revitalization, and preserving natural and agricultural lands.

Municipalities are required to use Growth Plan population and employment forecasts in planning for growth. Growth Plan amendment policies support the Lake Simcoe Protection Plan by directing a significant portion of forecast growth to primary settlement areas, and give further direction on identifying and planning for intensification areas. A forecast review is required at least every five years. The first review is underway.

Ministry of Transportation

No response.

Chapter 4 – Water Issues

4.1 Preparing for Drought: Ontario's Low Water Response Plan

Ministry of the Environment:

The OLWR Plan is designed to ensure provincial preparedness through co-ordination of provincial and local roles/responsibilities and support local response during droughts. MOE's Permit to Take Water program supports the OLWR Plan by ensuring compliance with permits at all times to prevent unacceptable interference with other uses of the water. At Level III, the most severe, MOE will use any regulatory measures at its disposal to lessen impacts of drought on essential water use.

Since 2004, MOE has been addressing cumulative demand issues by incorporating restrictions, as prescribed by designated high-use watersheds in the Water Taking regulation, in permits. Permits to Take Water for specified new or increased highly consumptive water taking in high-use watersheds are prohibited or constrained during the summer low-flow period. MOE intends to consider its approach to managing the cumulative impact of water takings in stressed watersheds in light of the new water quantity science produced by source protection committees under the *Clean Water Act, 2006*. Technical studies carried out under the source protection program delineate areas where water supplies are at risk, and this data can inform PTTW decisions.

MOE imposes water-taking limits on all Permits to Take Water to safeguard water resources and the ecosystem and to prohibit permitted water taking that causes unacceptable interference with any interest in water. MOE resolves low water issues related to water taking through its compliance program.

Ministry of Natural Resources

MNR leads the Ontario Low Water Response (OLWR) program to ensure provincial preparedness and supports local response in the event of a drought. MNR continues to support conservation authorities and water response teams in evaluating provincial watershed conditions, issuing notifications, and co-ordinating provincial participation on local water response teams. MNR leads the provincial response at Level III with support of MOE, OMAFRA and MMAH.

The OLWR Plan has been effectively reducing water use demand and managing low water conditions since the program's inception in 2000.

MNR has updated the OLWR Plan through amendments which were posted on the Environmental Registry in January 2012. The changes empower local Water Response Teams to declare Level I and Level II conditions and streamline access to information and communication with water users.

MNR has continued to work on improvements to address the outstanding issues. In February 2012 MNR formed a hydrogeology technical working group with representation from MOE, Conservation Ontario and 7 conservation authorities. MNR is funding 4 technical projects and 1 information technology project in 2012-2013 to support the further development and implementation of groundwater indicators.

MNR is currently re-evaluating issues previously identified by partner agencies with the objective of further improving program delivery.

4.2 Water Taking: Leave Something for the Fish

Ministry of the Environment

MOE appreciates ECO's comments and continues to work to improve the Water Taking Permits program.

MOE is working with MNR and other agencies to provide guidance on water quantity management at a watershed scale to inform and streamline permitting.

MOE appreciates recognition of our efforts to improve access to water taking data.
MOE intends to consider its approach to managing the cumulative impact of water takings in stressed watersheds based on new water quantity science produced by source protection committees and will consult broadly on any changes. Information from source protection, such as watershed-based water budgets, will help inform decisions related to planned growth and development as well as decisions on PTTW.

In 2005, MOE supported pilot projects by Conservation Ontario on methods for establishing environmental flow requirements. MOE also supported the Lake Simcoe Region Conservation Authority's development of a guidance document for establishing ecological in-stream flow targets for water quantity-stressed sub watersheds within the Lake Simcoe watershed. This guidance document, completed in 2011, was developed in consultation with MOE and MNR and helps fulfill a commitment of the Lake Simcoe Protection Plan. MOE intends to use the framework outlined in the guidance document to develop, in collaboration with other partners, specific ecological in-stream flow targets for stressed sub watersheds in the Lake Simcoe watershed.

MOE undertakes compliance inspections of permit holders. MOE works with water takers to reduce the likelihood of impacts and, when necessary, use enforcement measures to stop water taking that causes impacts. As well, MOE responds to incidents of interference with downstream uses of water or the natural function of the stream. When these incidents are attributed to water taking that is permitted, our abatement and enforcement responses range from education to amending permits, issuing orders, tickets, and undertaking investigations that may result in prosecution.

MOE is currently reviewing water taking charges to determine what changes should be implemented to ensure that water quantity management program costs are recovered as fully as possible from regulated water users.

4.3 Septic System Re-inspections: A Good First Step

Ministry of the Environment

The septic system re-inspection program is under MMAH's mandate.
MOE considers human health and environmental risks broadly to prioritize policy and compliance work on ecologically vulnerable areas, as reflected in:

- *Planning Act* comments about acceptable levels of lakeshore development
- *Lake Simcoe Protection Act, 2008*
- draft Great Lakes Strategy

Science completed in 2012 for the source protection program delineates vulnerable areas, including areas where nutrient loadings are an issue. This science informs land use planning decisions, determines septic re-inspection program priority areas, and results in restrictions on septic systems through policies in source protection plans.

The Ontario Drinking Water Stewardship program has funded over 1300 septic projects, including systems in intake protection zones where nutrient loadings are a concern. Discretionary septic-system inspection programs may also be established by the principal authority (i.e., municipalities) in areas outside of current vulnerable areas.

Ministry of Municipal Affairs and Housing

Requiring mandatory maintenance inspections in areas where threats to water quality exist, and authorizing local authorities to establish inspections in additional areas, balances health and environmental concerns and costs to industry and homeowners.

Technical constraints continue to impede efforts to reduce nutrient loading impacts. The most effective tools for nutrient management are deployed through setbacks established by planning and local zoning.

4.4 Concerned Ontarians use *EBR* Investigation to Expose Errors in Sewage Lagoon Permit Ministry of the Environment

Ministry of the Environment

MOE is confident that the Noëlville Sewage Lagoon (NSL) facility meets the current MOE Design Guidelines for Sewage Works 2008 as well as those from other North American jurisdictions for plug-flow sewage lagoons. The facility was designed to operate as a continuous plug-flow treatment system that allows for seasonal discharge and not designed for, or intended to operate in, a batch mode.

To ensure an unbiased and comprehensive review, MOE established a team of professional and technical staff from the Standards Development Branch, District Office and Environmental Approvals Branch who were not involved in the original CofA approval.

The review included technical assessments that confirmed the true capacity of the NSL facility. The team found no errors nor inconsistencies in the approach used to calculate capacity for the NSL facility or other plug-flow sewage lagoons across rural Ontario. The review also demonstrated that the NSL design approach is applied responsibly and effectively at sewage lagoons in Ontario, and across North America. MOE's design approach is consistent with US EPA guidance for lagoon depth, surface area, organic loading requirements, hydraulic retention time, treatment efficiencies and effluent biochemical oxygen demand.

MOE's review of annual performance reports for 2005 to 2010 showed that the NSL facility was in compliance with the CofA effluent limit requirements for the sewage lagoons, except for the emergency bypass of 2007. The bypass, a consequence of equipment failure which was subsequently rectified, resulted in a discharge of approximately 300 m^3 of sewage.

MOE has responded to all inquiries related to the application, met all expected reporting timelines for this application, offered to meet the applicants to discuss their concerns, and continued to respond to the queries of one of the applicants and the ECO after the review was complete.

Chapter 5 – Permitting Issues

5.1 Where the Rubber Hits the Road — Instruments and the *EBR*

Ministry of Northern Development and Mines

MNDM is actively monitoring this issue. If a Closure Plan for the Ross Mine site is not filed by September 30, 2012, MNDM will consider all possible avenues to enforce the Orders and the requirements of the *Mining Act*.

Ministry of Consumer Services

As the ministry that provides oversight of the Technical Standards and Safety Authority (TSSA), we understand that TSSA has communicated with your office. TSSA is committed to responding to future information requests in a timely manner.

Ministry of the Environment

No response.

Ministry of Natural Resources

No response.

Ministry of Municipal Affairs and Housing

No response.

5.2 More Amendments to Ontario's Air Quality Regulation

Ministry of the Environment

Ontario has some of the most stringent air standards in the world. The ministry remains committed to a system that drives all industry to improve environmental performance.
As the ECO indicated, provincial air standards are set based on science and may not be achievable by a facility/sector. In those circumstances, industries/sectors must work towards the standard through deploying improved technology and best practices.

To be eligible for a site-specific or technical standard, the facility/sector must demonstrate inability to meet the provincial standard. Ministry experts and other professionals review each case closely. MOE is committed to rigorously assessing all requests, including future renewals, to ensure continuous improvements are being made. All requests and all draft ministry approval documents are posted on the Environmental Registry for public comment.

MOE continues to ensure that public meetings are held for renewal requests that are of interest to local communities and will consult on the Environmental Registry on any future frameworks to address Canada-wide air initiatives.

5.3 MOE Failure to Stop Pollution

Ministry of the Environment

Since 2003, MOE has been taking progressively stronger compliance actions to address any adverse effects related to the Essroc facility. MOE put in place mandatory abatement measures requiring Essroc to implement measures to control off-site dust and noise impacts. MOE continues to respond to all complaints. Provincial Officer Orders were issued to successfully abate off-site noise impacts and implement particulate control.

In addition, there are currently two investigations underway for offsite noise and dust impacts allegedly resulting in adverse effects. MOE will continue its compliance approach and respond to all complaints related to the facility.

Chapter 6 – Moving Government Forward

6.1 Unfinished Homework: Prescribing the Ministry of Education under the *EBR*

Ministry of the Environment

No response.

6.2 Anti-SLAPP Legislation Nowhere in Sight

Ministry of Municipal Affairs and Housing

No response.

6.3 The Ministry of Transportation's Sustainability Strategy

Ministry of Transportation

No response.

6.4 Evaluating Environmental Programs: Aiming for Outcomes

Ministry of Municipal Affairs and Housing

In April 2010, a policy decision notice was posted on the Environmental Registry for finalized Provincial Policy Statement Performance Indicators. The indicators identified are the initial set being used to help measure the effectiveness of some of the policy areas in the PPS. A goal of the PPS performance monitoring program is to ensure that continuous improvement occurs. To that end, the Province recognizes that these indicators may need to be refined as new information sources become available and new indicators are developed, refined or potentially replaced entirely.

Ministry of Agriculture, Food and Rural Affairs

OMAFRA agrees that there are benefits to including program evaluation into the ongoing business processes within government.

Program evaluation is a standard approach within OMAFRA and a key component of program delivery. Results from evaluations help inform and improve future programs.

For the Environmental Farm Plan, OMAFRA undertook a research project in 2010-2011 aimed at Measuring Performance, Improving Effectiveness and Increasing Participation in the program. The research included a survey which evaluated peer-reviewed EFPs completed since 2005, detailing the number of actions identified on Ontario farms, the number of EFPs implemented, with or without cost-share funding, and barriers to implementation. The research identified opportunities to enhance current program performance measures and validated the need to conduct further research with non-participating farmers. This research updated an earlier EFP Indicator Survey from 2000 which looked at the progress of implementing EFP action plans from 1993-1999 and helped to determine whether EFP had helped participants manage environmental risks on their farms.

Research was also done to examine the effectiveness of EFPs, through an analysis of best management practices projects completed under the Canada-Ontario Farm Stewardship Program, and other cost-share programs associated with EFP. Visit: www.ontariosoilcrop.org/docs/final_report_spatial_analysis_nm_bmp_ontario.pdf

As part of the Growing Forward framework agreement, OMAFRA has also undertaken a review of all the non Business Risk Management programs which include the on-farm Environment and Climate Change Initiative that supports the Environmental Farm Plan. This review evaluated the issues of relevance, outcomes and customer satisfaction, program design and effectiveness, efficiency and affordability and sustainability. This review will inform the development of the next federal-provincial agricultural policy framework (2013-2018).

Ministry of the Environment

MOE is in agreement with ECO and is incorporating program evaluation into the ongoing business processes within the ministry. Many of ECO's recommendations are being implemented, both within MOE and across the Ontario Public Service.

An inter-ministerial Performance Measurement/Program Evaluation Community of Practice meets quarterly and provides an excellent forum for staff and management from all ministries to share best practices in evidence based program evaluation and performance management.

MOE fosters a culture of strong program management and continuous improvement. Program delivery staff play a key role in ensuring standardized approaches to assessing the performance of environmental programs and driving continuous improvement. In addition, MOE is formalizing a program evaluation process to prioritize programs for review across the ministry. MOE continues to build capacity for formal program evaluation and has invested in in-depth training for staff.

One example where MOE has successfully implemented program evaluation is in the follow-up work being conducting for the Cosmetic Pesticides Ban. MOE is finding that urban stream water pesticide concentrations of three pesticides commonly used in lawn care products have decreased by about 80 per cent since the ban came into effect.

Likewise, the Drive Clean program has undergone a number of independent program reviews that concluded significant reductions in smog-causing pollutants were being achieved, but that further reductions could result from program improvements, including the implementation of on-board diagnostics emissions testing which is currently underway.

Ministry of Natural Resources

Evaluation is a major component of several initiatives within MNR.

The new forest management guides capture an evaluation process described in "Effectiveness Monitoring of Forest Management Guides: Strategic Direction" that was sent to the ECO on June 30, 2010. This strategy has been implemented to evaluate if the direction in the new guides maintains biodiversity across the Area of the Undertaking.

Evaluation of fisheries management at a landscape scale is a foundation for MNR's Broad Scale Fisheries Monitoring Program which identifies and measures ecological indicators to support management of the resource. This evaluation takes place in certain lakes in each Fisheries Management Zone (FMZ) every five years.

To evaluate policy/resource management decisions MNR initiated formal training in 2011 on the integration of policy and science and this training is continuing in 2012. Integration focuses on the role of science in evidence based policy development and evaluation.

Ministry of Northern Development and Mines
No response.

Ministry of Transportation
No response.

Chapter 7 – Emerging Issues

7.1 A Terrible Waste – The Environmental Costs of Throwing Our Food Away

Ministry of the Environment
MOE agrees that food waste is an important issue in Ontario. There is a role for all to play in reducing food waste. The ECO's report will help raise awareness of the need for leadership from various sectors.

Reducing food waste involves influencing long-standing consumer and industry practices at a number of levels – on-farm, wholesale, processing, retailing and consumption – while maintaining the freshness and safety of a perishable commodity. This complexity makes quantifying the amount of food that may be wasted each year across all sectors of the economy a significant undertaking.

MOE has focused on providing opportunities to divert food waste once it is generated. In recent years, most large municipalities have voluntarily established household organics programs to divert food waste, contributing to a significant increase in the provincial organics diversion rate. In 2010, more than 2.5 million households had access to curbside green bin collection – an increase of 95 per cent since 2006. In 2010, nearly 400 000 tonnes of household organic wastes were collected through green bins. MOE is considering enhancements to its compost framework that includes new compost quality standards that would support investment in composting infrastructure and increased organics diversion.

MOE has also supported OMAFRA's efforts to promote on-farm biogas capacity. Benefits of biogas systems include energy production, nutrient recycling, and co-benefits such as rural investment and manure pathogen removal. In 2008, OMAFRA commissioned and received a report on food-based materials available for agricultural biogas systems.

MOE has also supported the diversion of some food wastes from landfill through the application of NASM to agricultural land, including fruit and vegetable peels and food processing wastes, returning beneficial nutrients and organic matter to soils.

Ministry of Agriculture, Food and Rural Affairs
OMAFRA appreciates that food waste is an important issue and that more can be done to reduce food waste at source.

The ministry has focused on the diversion of food waste once it has been generated. Examples of on-farm practices include the application of Non-Agricultural Source Materials (NASM) to agricultural land and on-farm biogas systems.

NASM includes leaf and yard waste, fruit and vegetable residues, food processing waste, pulp and paper biosolids and sewage biosolids. NASM contain nutrients and organic matter that benefit soils and crops. For information on NASM Regulations and Quality-Based Standards visit: www.omafra.gov.on.ca/english/nm/nasm.html

For food waste that is unavoidable (such as over-ripe, damaged, off-specification or out-of-date products, food processing by-products, 'plate food waste') biogas systems can optimize the benefits to society from these materials through energy production, nutrient recycling, and obtaining co-benefits such as rural investment and manure pathogen removal.

OMAFRA is also trying to find opportunities to increase the mix of food waste (e.g., up to 50 per cent) at agricultural biogas systems which would further enhance the ability of the biogas sector to capture new value from the food waste that cannot be avoided.

In spring 2008, OMAFRA commissioned a report to investigate the quantity, quality and current uses of various food-based materials that could be used as biogas system inputs. Results reported there are between 1.2 and 9.8 million wet tonnes per year of suitable food-based inputs that are produced in Ontario. The study estimates that roughly 50 per cent of this material could be available for use in biogas systems (the remaining 50 per cent might have other suitable end uses, or may not be accessible). Visit: www.omafra.gov.on.ca/english/engineer/facts/food_input.htm

ABBREVIATIONS

ADF	Average Daily Flow
ANSI	Area of Natural and Scientific Interest
ARA	*Aggregate Resources Act*
AOC	Area of Concern
AOU	Area of the Undertaking
BCA	*Building Code Act, 1992*
BOGOF-L	Buy one get one free – later
C of A	Certificate of Approval
CA	conservation authority
CBOD$_5$	carbonaceous biochemical oxygen demand
CFSA	*Crown Forest Sustainability Act, 1994*
CO$_2$	carbon dioxide
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COSSARO	Committee on the Status of Species at Risk in Ontario
CWA	*Clean Water Act, 2006*
Defra	Department for Environment, Food and Rural Affairs (UK)
DNA	deoxyribonucleic acid
EA	Environmental Assessment
EBR	*Environmental Bill of Rights, 1993*
ECA	Environmental Compliance Approval
ECO	Environmental Commissioner of Ontario
EDU	Ministry of Education
EMA	Enhanced Management Area
EPA	*Environmental Protection Act*
ESA	*Endangered Species Act, 2007*
ESDM	Emission Summary and Dispersion Modelling
FMZ	fisheries management zone
FWCA	*Fish and Wildlife Conservation Act, 1997*
GHG	greenhouse gas
GM	genetically modified
GPRA	*Government Performance and Results Act* (U.S.)
HRT	hydraulic retention time
IBA	Important Bird Area
IEB	Investigation and Enforcement Branch
kg	kilogram
LSPP	Lake Simcoe Protection Plan
MA-G	Ministry of the Attorney General
MCS	Ministry of Consumer Services
MMAH	Ministry of Municipal Affairs and Housing
MNDM	Ministry of Northern Development and Mines
MNR	Ministry of Natural Resources
MOE	Ministry of the Environment
MTO	Ministry of Transportation
NHA	Natural Heitage Assessment
NSL	Noëlville Sewage Lagoon
OBC	Ontario Building Code
OLL	Ontario's Living Legacy Land Use Strategy
OLWR	Ontario Low Water Response
OMAFRA	Ontario Ministry of Agriculture and Rural Affairs
OPA	Official Plan Amendment
ORMCA	*Oak Ridges Moraine Conservation Act, 2001*
ORMCP	Oak Ridges Moraine Conservation Plan
OWRA	*Ontario Water Resources Act*
POEA	polyethoxylated tallowamine
PPB	parts per billion
PPCRA	*Provincial Parks and Conservation Reserves Act, 2006*
PPM	parts per million
PPS	Provincial Policy Statement, 2005
PSW	provinicially significant wetland
PTTW	Permit to Take Water
PWPMP	Provincial Wildlife Population Monitoring Program
REA	renewable energy approval
SARA	*Species at Risk Act* (federal)
SEV	Statement of Environmental Values
SIP	Sustainability Implementation Plan
SLAPP	Strategic Lawsuits Against Public Participation
SWH	significant wildlife habitat
TSSA	Technical Standards and Safety Authority
TSSA, 2000	*Technical Standards and Safety Act, 2000*
US EPA	United States Environmental Protection Agency
WRAP	Waste and Resources Action Programme (UK)
WRT	Water Response Team

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